

7
21
.S65

NUNC COGNOSCO EX PARTE



TRENT UNIVERSITY
LIBRARY

THE MAINE BULLETIN

VOL. XXIX

DECEMBER, 1926

No. 5

University of Maine Studies

Second Series, Number 7

Indian Remains of the Penobscot Valley And Their Significance

By

WALTER B. SMITH

Published monthly during the academic year

Entered at the Orono Post Office as second class matter

STUDIES IN ENGLISH

1. The Life and Work of John Davis,
1774-1853 Thelma Louise Kellogg
2. Economic Feminism in American Literature
prior to 1848 A. Genevieve Violette
3. Thomas Green Fessenden Porter Gale Perrin
4. The Formal Eclogue in Eighteenth-Century
England Marion Kathryn Bragg

University of Maine Studies

Second Series, Number 7

Indian Remains of the Penobscot Valley
And Their Significance

By

WALTER B. SMITH

PRINTED AT THE
UNIVERSITY PRESS
ORONO, MAINE
1926

COMMITTEE ON PUBLICATIONS
of the
FACULTY OF GRADUATE STUDIES

W. J. Creamer (*Electrical Engineering*)
J. S. Stevens (*Physics*), *Chairman*
H. M. Ellis (*English*)
L. H. Merrill (*Biochemistry*)
E. M. Patch (*Entomology*)
R. L. Walkley, *Librarian*

BOARD OF EDITORS FOR THIS ISSUE

Editor in Charge

L. H. Merrill

Standing Members

J. S. Stevens

R. L. Walkley

F21.565

27-27014

FOREWORD

In April, 1926, Mr. Smith was invited to read a paper on the prehistoric inhabitants of the Penobscot Valley before the Arts Club of the University of Maine. The interest aroused by the paper was so great that it was suggested that it be printed as one of the University Studies. Later it was found that Mr. Smith had written several other papers on allied subjects, only one of which had been published, and permission was asked from the author to print the entire series, a request that was kindly granted.


Mr. Smith has for many years made a close study of the Indian remains of the Penobscot region and he is, without doubt, better qualified than any other to write upon the subject.

Two of the illustrations are from photographs of Indian pottery, painstakingly restored by Mr. Smith; all the other cuts are from drawings by the author.

L. H. Merrill.

November, 1926





Digitized by the Internet Archive
in 2019 with funding from
Kahle/Austin Foundation



CONTENTS

	PAGE
Aboriginal Axes of the Penobscot	7
Archaic Pottery of the Penobscot River	19
Old Stone Tobacco Pipes of the Penobscot Region	30
Stone Plummets of Maine: A Class of Puzzling Prehistoric Relics	46
A Village and Burial Site on the Penobscot River near Bangor, Maine, Showing Different Periods of Oc- cupancy by Prehistoric Man	58
If Norsemen Landed on the Coast of Maine, Centuries Ago, Could Tangible Evidence of their Visits Still Exist?	85

ABORIGINAL AXES OF THE PENOBSCOT*

In this region, where the development of the natural resources, or the destruction thereof—as you choose to view it—has so largely depended upon the use of the lumberman's axe, it may be of interest to note those earlier, local forms of this humble instrument made and used by our predecessors.

Here and there along the shores of the streams and rivers and lakes of the Penobscot drainage system are occasionally found large, deeply-grooved and roughly-sharpened implements of stone which we readily recognize as primitive axes of the Indians.

They are by no means peculiar to the Penobscot or to Maine, but they vary greatly in abundance in different localities; indeed, there are state-wide areas where no grooved stone axe has yet been found. There is a great diversity too in their sizes, forms, and the rocks of which they are made. The axes of one section of the country are generally found to possess peculiarities which distinguish them from those of another section.

Axes are not simple tools, like spall knives and hammer-stones, as they required handles to make them complete and of use, but I do not know of any remnants of such handles having been preserved or found. We may be able to form a good general idea of the way they were attached but the details of their lashings seem to be lost. Neither have I found in my limited reading of old descriptions of this part of the country, specific mention of stone axes, or the way they were hafted, or used.

One writer has pithily stated that the greatest difference between iron axes and stone axes is that in the iron kind the handle goes through the axe; while in those of stone the axe goes through the handle.

We naturally associate axes with lumbering operations and wood chopping, but the idea of anyone ever felling large trees with stone axes has been questioned. We must remember, however, that all our stone axes are surface finds, or such as have been turned up by plows or very shallow excavating, and that after centuries of weathering which has destroyed all traces of handles and even bitten deeply into the stone itself, they are far from being in the same condition as when new.

*Read at the quarterly meeting of the Bangor Historical Society, April 6, 1915.

Of course there was no call for extensive lumbering during the stone age, but the inhabitants in this climate required much wood for their fires; they used large logs for making into dugouts, smaller ones for palisades; they had poles for wigwam and canoe frames and for fish weirs; they needed various kinds of wood for basket making, for snow shoe frames, for bows, arrow stems, spear shafts and for paddles. As there was so much need for both the cutting and splitting of wood it seems probable that stone axes were used for practically the same purposes as modern ones, and that it was feasible for powerful men expert in their use to chop down trees of any size, either with or without the aid of fire, and to split them as desired. No doubt, too, they were used to some extent in the killing of large animals and at times served as battle-axes, but the larger ones seem too unwieldy for quick action.

The Indians selected stones for axe-making from amongst the numerous glacial boulders and cobble stones along the river. They never used for this purpose flint and flint-like substances, but took hard and tough rocks which could be chipped and battered into shape and ground to a sharp edge. Certain fine-grained diorites, diabases, andesites and other eruptive rocks composed largely of intimate mixtures of hornblende, pyroxene, and feldspar; and some of the complex metamorphic rocks were preferred to those varieties made up either wholly or mostly of quartz.

The average weight of local stone axes is not far from four and one-half pounds; a few are twice as heavy, and one has been found which weighs twelve pounds.

While both larger and smaller axes have been discovered elsewhere I am not aware of an area of equal size where a greater variety of rocks was used for making axes, or where more interesting specimens have been found.

CLASSIFICATION

Notwithstanding the great diversity of shapes observable in Penobscot axes, they may be conveniently classified in four groups, as follows:

- (a) Chopping axes.
- (b) Splitting axes.
- (c) Notched axes.
- (d) Peculiar forms.

Persistent variations from types, however, require the further division of some of these groups into sub-groups. This classification, while mainly based upon the different ways stone axes were grooved or notched for hafting, also indicates to some extent the purposes for which they are supposed to have been used. It will be noted that no hatchets, tomahawks, or celt-like implements which lack characterizing grooves or notches are here considered.

At least ninety percent of all our Penobscot axes may be placed in the first two groups of this classification.

• SPLITTING AXES.

An examination of more than a hundred local stone axes shows that about forty-five per cent of them are completely encircled by a groove made at right angles to their longest diameters. This groove is above the middle of the axe—sometimes, but

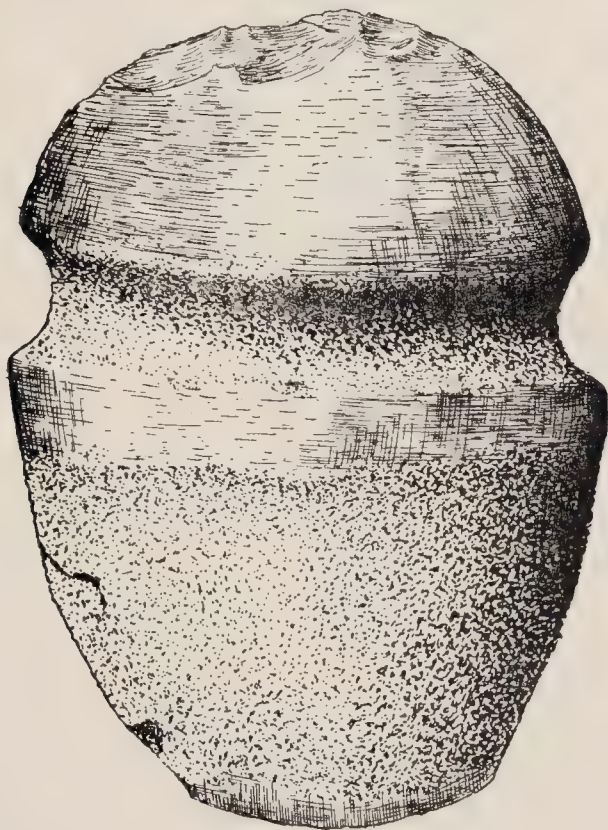


FIG. 1. Splitting Axe. Fort Hill, Veazie. Size 1-2.

rarely, as near the poll as the middle. It is an inch or more wide in most examples and from a quarter to a half inch deep across the sides of the axe, but often twice as deep at the edges. The sharpened edge is generally moderately thin, rather narrow and much rounded at the corners.

The tops, or polls, usually show where chips and spalls have been beaten off as though from heavy blows struck with a club, or as if the axe-poll had been used as a maul. Such places generally lack that bruised appearance which would result if they had been pounded with a stone.

These axes form a distinct group; it embraces some of the largest specimens found and some of the crudest. Occasionally a well-finished specimen is discovered, but generally little labor has been expended in their shaping except for making the groove and thinning the blade.

Figure 1 shows a splitting axe found at Fort Hill, Veazie. It is a little broader in proportion to its length than the majority of specimens, but is, otherwise, typical of this group.

CHOPPING AXES.

The axes of this group are decidedly different from those which we have called splitting axes. They average somewhat smaller, are, as a rule, far better made and some are made of finer-grained and harder rocks.

The groove extends across both sides and around one edge only, but it seldom forms a right angle with the axe, being made more or less oblique, so that when hafted, the blade "hangs in" as wood cutters say. A characteristic feature is that the stone has been worked down on each side of the groove nearly to the depth of the groove itself, thus leaving prominent ridges paralleling the groove and extending with it around the axe. The poll is frequently carefully worked to a flattish, rounded cone and seldom shows signs of rough usage.

These axes are somewhat narrower than splitting axes although the cutting edge is somewhat wider, thus making them nearer the shape of modern steel axes.

Figure 2 shows a deeply grooved axe of this class. It is from Eddington.

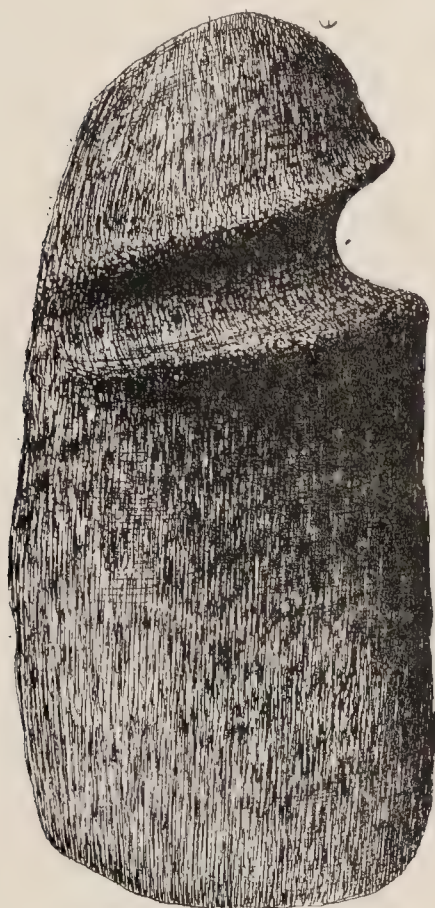


FIG. 2. Chopping Axe, Eddington.
Size 1-2.

Figure 3, an axe from Orono. It has evidently seen much service and no doubt has been considerably shortened by successive sharpening.

The so-called crooked axes would be placed in a sub-group. These are rare. They are long, very narrow, and are longitudinally curved.

Figure 4 is a very fine example. It was found on the Maine State Hospital grounds in this city. A peculiar feature of this axe is that the edge which would come next to the handle is ground off smooth, presumably for the seating of a wedge between the axe-head and the handle.



FIG. 3. Chopping Axe worn by much use. Orono. Size 1-2.

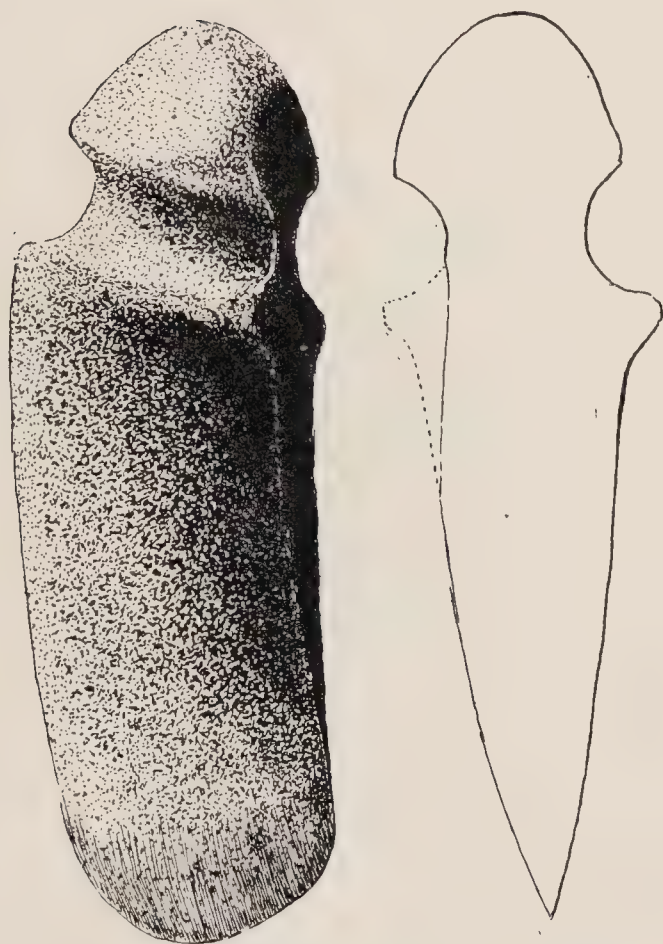


FIG. 4. Crooked Axe. Bangor State Hospital
Grounds. Size 1-2.

NOTCHED AXES.

These are not grooved but have instead rather large rounded-out notches on opposite edges near the poll. Just how they were hafted and used is not clear. They are far from common on the Penobscot and those found are rather small. The specimen shown, Figure 5, is from Veazie. They are sometimes called hoe-axes.



FIG. 5. Notched Axe.
Veazie. Size 1-2.

PECULIAR FORMS.

The fourth group is intended to embrace all peculiar forms of axes not heretofore included. This is a small group. The few specimens I have seen belonging here owe their peculiarities to the naturally odd shapes of the stones of which they were made.

THE SITE OF AN AXE MAKER'S SHOP

One of the most interesting features of searching for relics left by the prehistoric races that have preceded us in this valley, is, to me, in finding sites of their workshops; in gathering up their partly-made artifacts; in tracing out the sources of their raw

material; in hunting up the tools they used, and in endeavoring to reconstruct their various manufacturing processes. Places where chipped blades such as arrow points and spearheads have been fashioned are not uncommon and are well marked by great numbers of tell-tale chips and discards, but the precise points where axes, celts, gouges, and a few other classes of implements have been made are very rarely found.

Late last fall I was fortunate in locating a spot where some unknown axe-maker had at some unrecorded time patiently fashioned the materials of his craft. I think we may safely say that they had trades then, as certain individuals would acquire unusual skill along certain lines and become the arrow-makers, gouge-makers, or axe-makers of their time and tribe.

This site is a few miles up the river from Bangor, or to be exact, just below the Bangor Railway and Electric Company's power plant at Veazie—just under the hill from the big sign-board, reading "All Trespassing Forbidden," or something similar. But the wording is unimportant as this warning wasn't there when the axe-maker was.

A few rods below the power plant was formerly a large saw-mill (carried away by the freshet of 1846). Below this mill site is a little bay worn out of the side of the bluff and locally known as "The Eddy." During the activity of the saw mill the basin-bottom of the eddy became filled with water-soaked sawdust, slabs and edgings. Later these became covered with a rather thick stratum of sand.

The new dam of the power plant located differently from the old one caused the swift water to flow into and clean out much of the sand and mill debris from the bottom of "The Eddy" and as the water shrank away with the drought, it became mostly dry land. This is largely blue clay but with many rocks and small boulders scattered about or in patches. Among these, in an area of about 18 by 40 feet, were found various evidences of this ancient axe-maker's industry.

There was only one good axe in the lot; three others had probably been completed but when found were so much weathered, that it is difficult to say if they had ever been quite finished.

Besides these axes were several broken ones and more than a dozen partly made axes, left at various stages of completion, or

abandoned because of unfortunate breaking of the stone. There were eight or ten hammerstones of quartz-porphry of various sizes, used in shaping the axes and hollowing out the grooves. There were several rubbing stones and whetstones used in rubbing down and sharpening the blades. There was also found here a piece of sandstone of good grit, which shows much use. Its most interesting feature, however, is a groove a little more than an inch across, which would seem to be about the right size to rub down and smooth wooden handles for the axes that were made here. There were also found chips and spalls which had been knocked off in the process of axe making, also an abundance of raw material—stones which had been piled up here for future use.

Figure 6 shows the beginning of an axe. It is simply a rounded, oblong, flattish glacial-ground and water-worn stone that ap-



FIG. 6. The beginning of an Axe.
Veazie. Size 1-2.

proached the tool maker's idea of what an axe should look like. It shows very little of man's work. He knocked off a few spalls to test its soundness and quality: he hammered it a little where the groove should start, but this is all. Perhaps he intended to finish it later, but the worked places are old and weathered, the axe-maker is dead and gone and the world has now no use for stone axes however fine their finish. Several of the other examples were discarded for more obvious reasons—mostly on account of flaws or breaks. A few were nearly finished but set aside for no apparent cause. One specimen shows a deep groove on one face, extended into a notch at the edge and carried across the other face nearly to the opposite edge before the work stopped. We may conjecture that the workman's thoughts were elsewhere as he pecked away at this groove, and that he was disgusted at finding that the ends would not meet, as he had worked this groove obliquely on one face and straight across on the other.

The sequence of work seems to have been: *first*, a very little preliminary chipping, more, I judge, to test the grain of the rock than to shape it, as in some cases only one or two chips were removed—sometimes even this was omitted; *second*, making the groove; *third*, spalling and chipping off as much surplus material as safety permitted; *fourth*, shaping it with hammer-stones; *fifth*, grinding down and smoothing the blade with rubbing-stones and sharpening its edge with whetstones. After this would follow the hafting.

I have profound respect for the product of this old-time tool-maker, but I fail to see his reason for completing his grooving before he blocked-out or rough-shaped his axes.

Considering the evidence offered by all these tools and fragments it seems certain that in this curve of the bluff and close to the water's edge we have a location where genuine, hand-made Penobscot stone axes were once manufactured—the first plant, so far as the writer knows, established for this purpose on the river.

SUCCESSOR OF THE STONE AXE

It would be interesting to know just when the first iron axes were brought to the Penobscot—and by whom. There are some

indications that point to a time considerably earlier than Champlain's visit in 1604, but positive proof is lacking.

It has been mentioned that stone axes are surface finds. I am unaware of a single grooved or notched stone axe ever having been recovered from a grave. This seems strange, as these places are the repositories of our most perfect and best preserved relics, and but for this single exception, all classes of stone tools, weapons, and implements have, I believe, been found therein. It seems strange, too, that iron axes should be the first, or among the very first, articles of European manufacture to be included with native work in graves of the earliest historic times on this river. Such burial places are occasionally, accidentally discovered. One in Orono, revealed by a crumbling river bank, contained three iron axes that had been severally and carefully wrapped in birch bark. A grave in Winterport, found in the same manner contained one. Others have been found at Sandy Point, and elsewhere along the river.

These early, iron axes are not, however, confined to graves as they have been found in various other places. They are sometimes called ringed axes, as they were finished at the top with an eye or socket for the handle. They had no poll. They are generally supposed to be of French make and most of them may be, but a few show a trade-mark that is said to be traceable to Utrecht.

ARCHAIC POTTERY OF THE PENOBSCOT RIVER*

Much of the ancient pottery of this region, discarded centuries ago, is now in the literal condition described in these lines by Longfellow:

"Behind us in our path we cast
The broken potsherds of the past,
And all are ground to dust at last
And trodden into clay."

Only one entire example of primitive pottery, so far as I know, has been found on the Penobscot.

Mr. H. M. Burnham, of Old Town, told me about it. He said that one day as Mr. Severance, a cook for the Great West Branch drive, was poking around among the odd rock formations at Ripogenus Gorge, he found in a sheltered crevice an odd-shaped vessel which he took to be an outlandish style of bean pot. "It was kind of roundish-pointed at the bottom and was finified up about the rim with odd-looking marks. It had no legs nor bail nor handle." It was not recognized as of Indian make till some of those who examined it saw afterward old potsherds of identical material and appearance dug up at Indian Island. It was found more than 50 years ago. What became of it is unknown.

While complete vessels cannot seem to be discovered, broken pieces, potsherds (sherds or shards as they are oftener called), are not rare. Indeed, after one becomes accustomed to notice these things, he will even recognize here and there in the soil of certain village sites considerable quantities of sand which has resulted from the disintegration of Indian pottery.

An examination of this sand, or better, a close scrutiny of pulverized shards shows small grains of quartz, mica, feldspar and, more rarely, of other minerals in the burned clay-matrix or binding material which held them together. An examination of hundreds of shards from many points on Penobscot waters shows this sand to be of the same general make-up. As it consists of the component minerals which form granite and apparently in similar proportions, and as the particles are not rounded by abrasive wear, it is clear that the Indians used pulverized granite instead of sand

*Read at the quarterly meeting of the Bangor Historical Society, October 4, 1921.

or broken shells for tempering the clay of their pottery. Once in a while it is rather coarse, the individual grains, particularly cleavage faces of feldspar, being one-quarter inch across. So much for its composition.

The shards naturally vary much in size but it is rare to find one more than a few inches across. They are from one-eighth of an inch to an inch in thickness. They vary in color too but are mostly weathered shades of light reddish brown, grays, deep brick reds, and black. Their color and firmness depend much upon the degree to which they were burned. The markings on these shards give us some idea—but frequently an erroneous one—of their ornamentation. The diameter of some of the pots, however, may be approximately told from the curve of the larger pieces.

Most shards are found singly, one here, another there, but once in a while in digging about the site of an ancient village or fishing camp, a little group will be found pretty well bunched. Very rarely enough shards are thus found in one spot to permit the restoration of a nearly complete vessel.

I shall now consider a few examples that I have puzzled together.

POTTERY FROM THE SALMON POOL

The Bangor salmon pool is well known to modern fishermen, since of all New England rivers formerly abounding in Atlantic salmon, the Penobscot is the only one up which these game fish continue to run, though they come now in greatly diminished numbers. Shad, which the early white settlers found in almost unbelievable quantity, have completely forsaken the river. Less desirable varieties of fish in more or less abundance still put in an annual appearance—smelt, tomcod, alewives, sea-bass, also lamprey eels and a few lonely sturgeon.

Long before the first white men wet a line in its waters, the Penobscot had its fishermen, and here, as at other similar places on the river, may still be found the sites of their old fishing-camps.

The Bangor shore of this pool is occupied by a railroad embankment and water works buildings, so that little can now be told of its original appearance.

On the Brewer side—the favorite fishing ground—is a crumbling bluff-like bank which each year recedes a little from the water. Along the face of this bank ancient fireplaces have been exposed fifteen to eighteen inches from the surface, as the frost peels off its annual toll of soil from the square-edged bank. In and about some of these spots, associated with charcoal, ashes and a few reddish stones, are many fragments of pottery. Most of these pieces are very small. Many have fallen into the water with the dirt in which they were embedded and have been carried down-

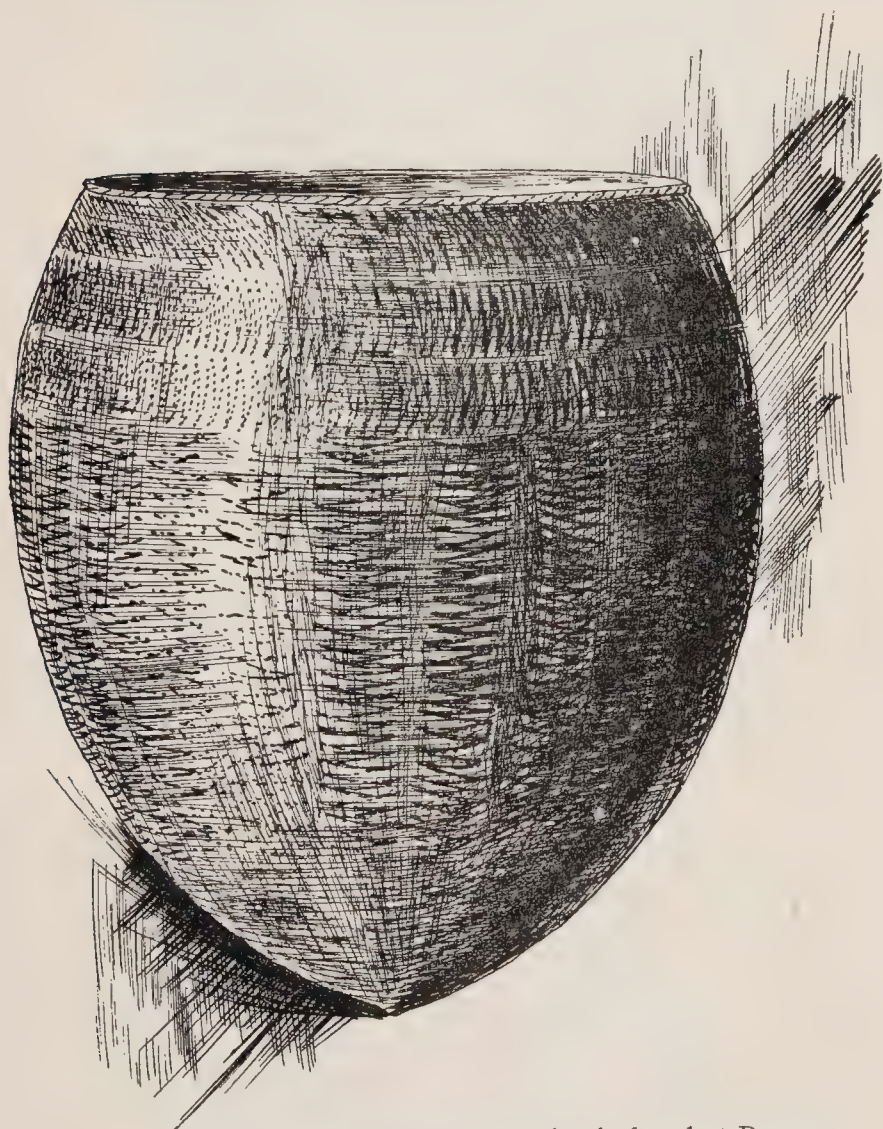


FIG. 7. Indian pottery restored from shards found at Bangor Salmon Pool, Brewer. Size 1-3.

stream by high water and high tides. However, enough pieces of one pot were saved so that about half of it could be pieced together, thus giving a good idea of its size, shape and ornamentation. This is shown in the sketch, Figure 7.

These sketches represent the pottery as somewhat more symmetrical than it actually was, as no attempt was made to show the inequalities incident to its method of manufacture, or the distortion of its restoration.

Figure 8 is a photograph showing (about one-fourth full size) the restoration of the greater portion of a pot from pieces found by Mr. Hoyt T. Parks, a short distance above Oak Grove Spring, in Brewer. The shards were firm, had for the most part sharp edges, and fitted together the best of all that I have ever worked on. The sides are straighter and the bottom is far more pointed than that of the acorn-shaped specimen from the Salmon Pool.

POTTERY FROM POLLARD BROOK

A considerable number of shards used to be found at the mouth of Pollard Brook, near the foot of Passadumkeag Rips, in Edinburgh. The rather low, loess-like bank, before being protected, was easily disintegrated and washed out by freshets. After the water dropped, many fragments could sometimes be found along the shore. These were mostly small, varying much in design and apparently representing many different vessels.

I have thought that so many shards in one small area, some of them lacking the ordinary inner carbonizing of long used dishes, might indicate the location of a primitive pottery.

On one visit to this locality I found on the shore quite a number of shards which seemed to belong together. Tracing these fragments from the water's edge, like a prospector searching for ores, I found that they led diagonally across the shore upstream to an ice-gouged bank. Here the source of these particular shards was discovered. Evidently a large pot had become crushed at this spot. I dug out more than a hundred pieces twelve to sixteen inches below the surface. Portions of other pieces of the same vessel were uncovered immediately beneath these, but unfortunately they were frozen solidly into the dirt, as it was April and the frost was not yet out. I could not stop to build a fire to thaw the ground; so I covered these exposed fragments carefully, prom-



FIG. 8. Near Oak Grove Spring, Brewer. Size about 1-4.

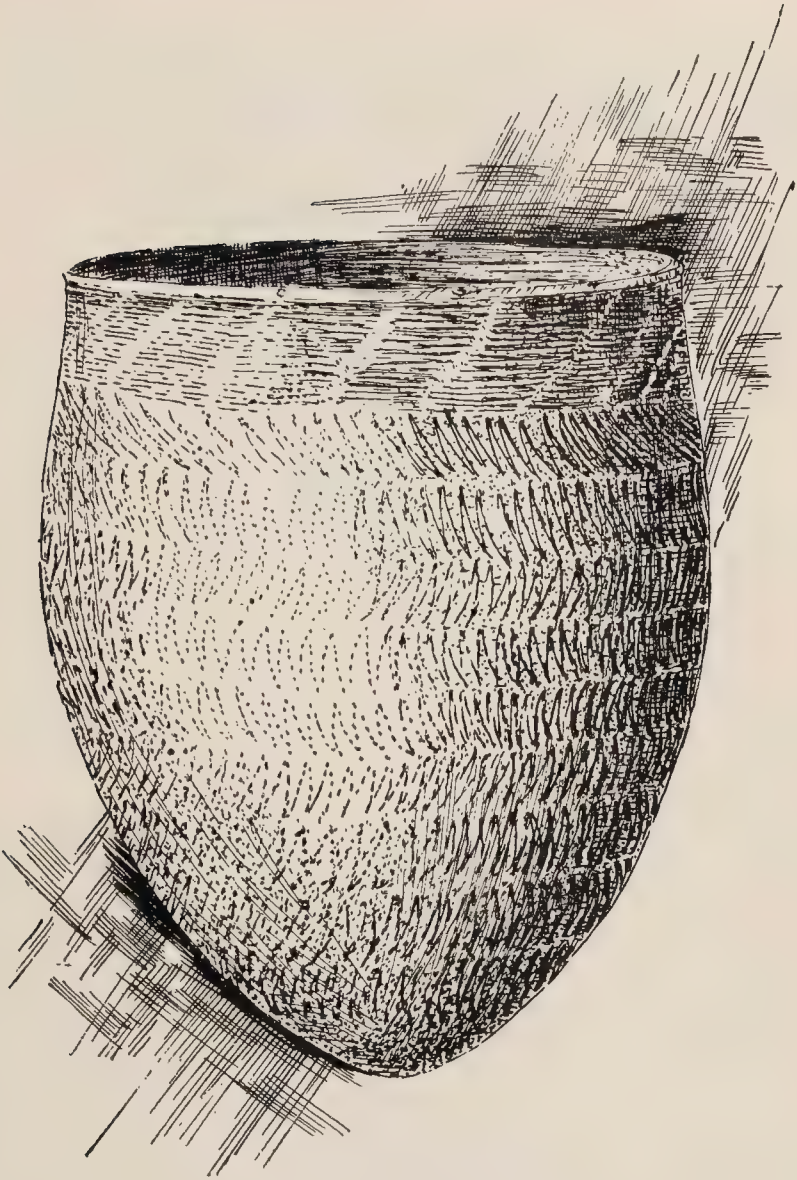


FIG. 9. A Pollard Brook pot, restored. Size 1-3.

ising to come back later. No opportunity offered that season, but the next fall I found time to again visit the site, which to my disappointment, had been dug over in the meantime by others. In re-digging the soil, however, I secured a few pieces which were essential to restore the pot shown in Figure 9.

The cone-shaped pot shown in Figure 10 was built up from shards found in the shore-bank of the McNulty farm in Orono. The rim is not recurved but is finished by a straight flare.

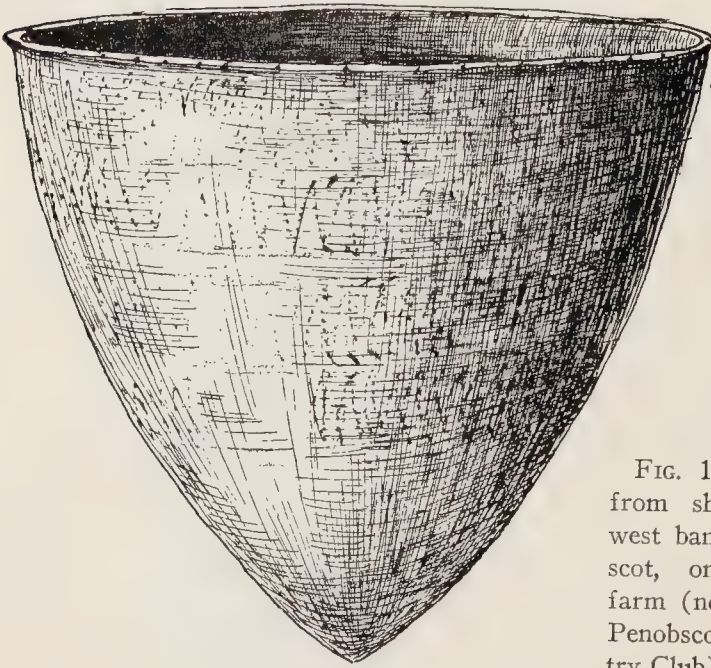


FIG. 10. Pot restored from shards dug from west bank of the Penobscot, on the McNulty farm (now owned by the Penobscot Valley Country Club) Orono. Size 1-3



FIG. 11. Shards found in edge of east bank of the Penobscot at Eddington Bend permitted this restoration. Size 1-3

Figure 11 illustrates the smallest of these rebuilt vessels. Its capacity was very close to an exact gallon. The shards were dug from the river bank near Eddington Bend.

SHARDS FROM VEAZIE

In one of my rambles up river one fall, I came to a rather large tract of newly plowed land about a half mile above the old village site of Fort Hill in Veazie. Looking for relics, I searched back and forth along the furrows for several hours but without much success; my only reward being a few spalls, a broken arrow-point and two or three small potsherds.

The next spring, after heavy rains had beaten the soil down smooth and when every little, clean-washed surface pebble stood out in bold relief, another trip was taken to this same field. The conditions were ideal for seeing things, yet the field remained nearly barren of stone relics. What I did not see during my fall visit, but plain enough now, were numerous patches of charcoal irregularly scattered about—ten, twenty, forty feet or at greater distances apart. The interesting feature of these remains of ancient fires was that most of them contained fragments of pottery mixed with the charcoal. There were hundreds of shards, but they were small, had for the most part, crumbling edges, and defied the utmost ingenuity to restore.

Associated with these shards were a few curved crusts of black, porous, carbonized material which had formed a coating on the inside of the pot and resulted from the substance cooked—perhaps a case of letting the pot boil dry. In two instances these were attached to the shards. Others were found loose in the soil. They are thin (the thickest one found being less than one-fourth inch) and break easily yet they are not crumbling and curiously have proved to be more enduring than the vessels which they lined.

This field does not show evidences of a work-shop, camp, or village site; neither was it a cemetery as was proved by many test holes. The presence of so many shards without the association of other relics, scattered over a wide area, seemed a problem. I am not sure that I have the right solution, but it may be that rock maple trees once grew here and that these shards are remnants of sap kettles in which the Indians boiled down their maple syrup.

Possibly experimenting with such crusts as those described would prove this.

THE MEDFORD VASE

A thick and fairly large shard was lying just at the water's edge of the Piscataquis River, about a mile above the railroad bridge in Medford. The writer came along and picked it up. A few other pieces scattered along upstream led to a caving and square-edged place in the river bank which was here made up of sand and silt. In the face of this bank and about three feet from its top the protruding edges of two or three shards showed plainly. The soft dirt about them scratched away with a stick quickly brought to light a pocket of shards similar to the pieces found along the shore. These were carefully saved, although they fell to pieces considerably in handling. Mr. Hoyt T. Parks was with me and helped to dig them out; indeed, we did a lot of unrewarded digging after the last piece was found.

There were no tools, weapons, fire burned stones, or charcoal to be found with them or in their neighborhood. We thought that this pot, which was lying on its side, crushed nearly flat, had not been purposely buried here by man but had been caught and stranded here and deeply covered over through the agency of some long-ago flood. The water-deposited, sandy silt in which it rested had large trees growing from it and contained the decaying stumps of still older ones, thus indicating that at least several centuries had elapsed since this pot had been lost.

Finding it was easy; its rebuilding was something different. Fortunately the rim shards were well preserved, and there were enough other pieces which fitted definitely to establish the curves from top to bottom. In outline it is the most graceful of all of the forms found and might be better described as jar or vase-shaped than pot-shaped. (Figure 12.)

Its chief ornamentation is a row of small holes which encircle the neck, one inch and a quarter from the brim, and spaced about seven-eighths of an inch apart. Its dimensions are: from top to bottom, 16 inches; greatest cross diameter, $12\frac{1}{4}$ inches; across brim, 10 inches. Its capacity was a little more than $5\frac{1}{2}$ gallons.

From these examples—if they prove representative—we may gather a fairly accurate, composite comprehension of the typical

shape of the aboriginal cooking pot of the Penobscot. It was deep and bluntly pointed at the bottom, and had little narrowing of neck and only slight recurve of brim. It may have been modeled on or from a squash. To me its shape suggests that of a large hornets' nest with the top sliced off and the rim turned a bit outward.

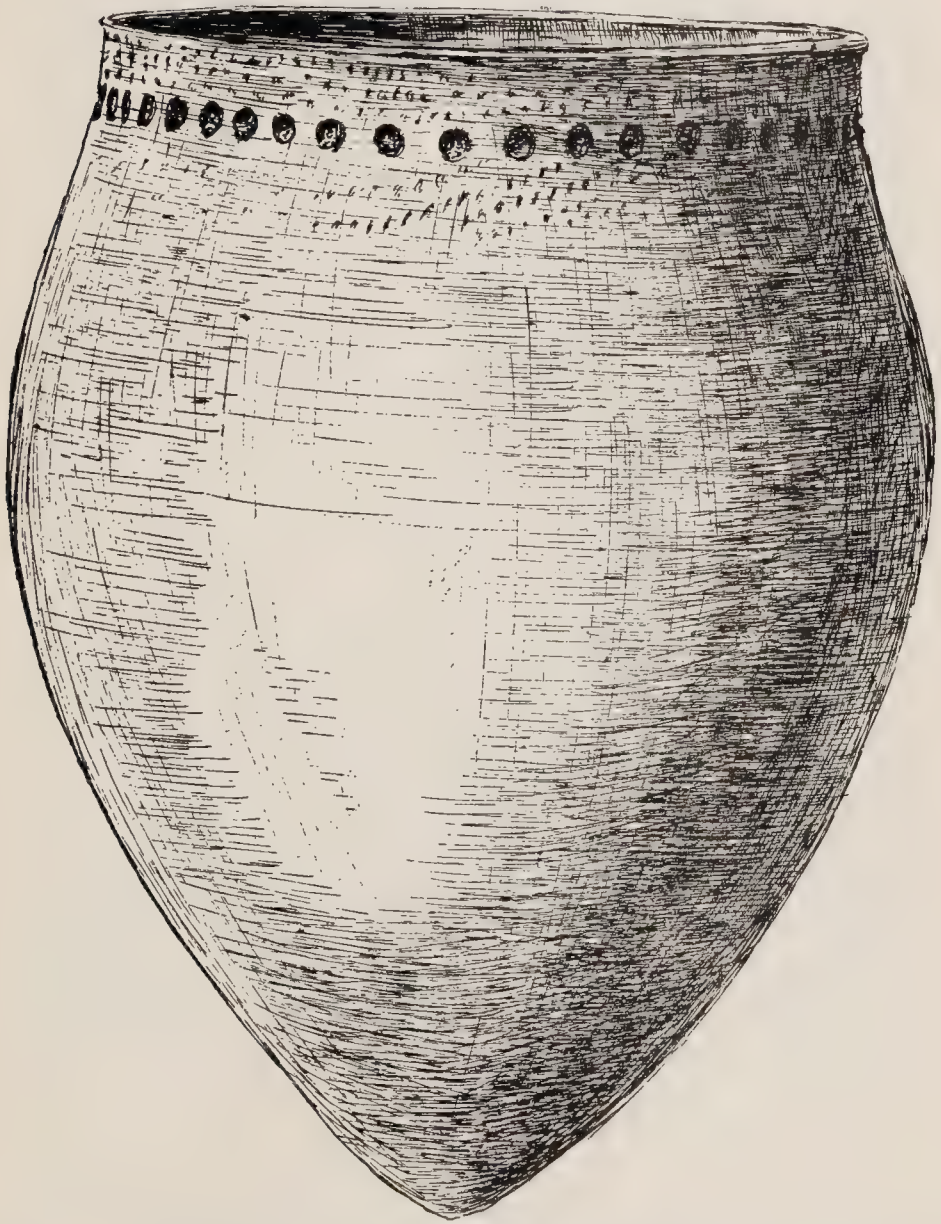


FIG. 12. The Medford Vase, restored. Piscataquis River, Medford. Size 1-3.

While most shards found appear to have been parts of pots similar to these illustrated, a few fragments show the curvatures of much smaller vessels. These are generally thin and have minute and painstaking decorations. Enough material for restorations sufficient to show sizes and forms has not been found, or if found has not been saved. One little rim shard was from a vessel little over an inch across. This would indicate a toy dish, a pottery bottle-top or a pipe bowl.

From a study of these small remnants it would appear that our Indians were not entirely without pottery other than that designed only for culinary purposes.

ORNAMENTATION OF PENOBSCOT POTTERY

It would appear from the shards found that every vessel of our native pottery had been more or less decorated, particularly near its top. Sometimes this decoration extends half or two-thirds of the way down, and in a few cases is found very close to the base. In all instances the decoration was done by cutting or pressing the design into the clay while it was soft. There was a great variety of such embellishments. All could have been produced with simple tools of bone, stone, shell or wood.

Some of the stone tools used for this purpose no doubt, are occasionally found. They are delicate little instruments generally made of slate. Some have chisel-like ends not exceeding one-fourth inch across, with either square or round corners. They are like tiny celts. Others are very thin strips of slate with long flat points.

The round holes which are frequently found extending half way through some shards were generally made by a small hollow bone, ground or broken off square at the end. This is told by the little tip which is left in the center at the bottom of each hole.

It is very obvious that in doing incised ornamenting in damp clay (unlike painting) the decorator would have to be expeditious lest the clay become too dry. For this reason we find that the sometimes elaborate designs started near the rim soon give out; that simpler designs cover more surface.

The decoration of our pottery apparently served two purposes: to please the eye, and to give better grips for the hands on these, at least sometimes, greasy dishes. Anyway the potter, it



FIG. 13. Ayer's Falls, Bradley. Size, a little less than 1-2.

appears, wished to carry the ornamentation well down the sides of the vessels. The drying clay would not give her time to work out art ideas as she desired, and in order to finish the job she resorted to a sort of machine-like design which could be done rapidly to piece out the work that was painstakingly and thoughtfully started. This design consists of curved, finely scalloped lines with ends joined to make acute serrations. It was done with a small shell, a pecten. The edge of the shell was applied to the damp clay, leaving its impression. Then, using one corner of the shell as a pivot, it was swung a little and rocked back on its edge to a position very close to the impression made first. Then the second corner was used as a pivot, and so on. Swinging it from alternate corners it was rocked back and forth around the vessel leaving the tracks of its progress as a wide, encircling zone. Walked up and down the vessel's side, it formed stripes. Applied diagonally, spirals were produced. The same vessel sometimes shows both stripes and bands.

Traces of this decoration, "the pecten design," may be detected on the majority of shards found along the Penobscot.

No pottery has been identified with the relics of our most ancient prehistoric cultures on the Penobscot, though all native pottery is of considerable antiquity.

It is not probable that such pottery has been made or used here for, at least, two and a half centuries. It is possible that some of it antedates the days of Columbus. But two centuries or ten, it represents a step upward in the scale of civilization; it shows the efforts of our ancient predecessors to better the conditions of their everyday life; it illustrates their striving to create beauty of form, to give expression to art instincts.

It is time the work of the first Potters of the Penobscot receives recognition. My profound respects to the work of their hands!

NOTE. Since the foregoing was written a flood of the Penobscot in the spring of 1923 revealed a nest of shards in the undermined river bank at Ayer's Falls in Bradley. These pieces when carefully cemented together came nearer making a complete vessel than any example previously noted.

It is shown, a little less than one-half size, by Figure thirteen, from a photograph.

OLD STONE TOBACCO PIPES OF THE PENOBSCOT REGION*

Ceremonies, religious or superstitious, and social, meant much to the Indians of olden days. The significance of some of their dances, of tobacco smoking, of the passing of strings of wampum, and a few other of their ceremonial customs we understand at least in part.

Having no legal papers to sign, no Bible to swear by, they used in place thereof certain objects the importance of which in their transactions it is impossible for us fully to grasp. Some of these objects were made of stone which has endured. Some are found, still showing incised marks or marginal notches probably intended to fix the time, place, number or importance of events in the minds of the participants.

It is suspected that certain ancient ceremonies had died out before the arrival of white men. At least there seems no other way to account for various persistent types of finely-made stone relics than to consider them to have been used somehow in connection with ceremonies of which we have no conception. These things are found sparingly but over a wide area. Our ignorance of their uses prohibits a satisfactory classification, but they are generally called ceremonial objects, or better still, placed in the problematical group.

If the tobacco-smoking ceremony had been abandoned before Europeans came to America, we, no doubt, should be guessing the purpose for which pipes were made and wondering how they could possibly have been used. Tobacco pipes, now so commonplace, would necessarily be displayed in our museums among other mysterious objects in the problematical class.

But smoking had not died out, and perhaps the spectacle of smoke coming from people's mouths as the pipe was passed around and the mystery of puffing smoke toward zenith and nadir and the cardinal points caused more amazement and curiosity than any other native custom which the first pale-faced visitors beheld.

Anyway, white comers tried smoking the Indians' tobacco. They found it good, or thought they did, and immediately introduced it to the rest of mankind. Curiously, as pointed out by Pro-

*Read at a meeting of the Bangor Historical Society, January 3, 1923.

fessor Shaler (I think it was he), the Indians themselves seem to have acquired the *habit* of using tobacco from white men. Thus has an ancient ceremony, with its beautiful moral significance, become degraded into an all-pervading custom of doubtful good to mankind, although after three and one-half centuries of tobacco smoking, people are far from unanimous in their opinions on the subject. Certainly it is not now regarded as the universal panacea it was at first, nor are schools such as once existed in England, necessary to teach people its use.

As the habit of smoking grew, the number of pipes increased accordingly.

When white people began to make pipes they naturally copied those of the Indians, and they are still doing so. Shapes have been modified, additional material has been utilized, and machinery employed in their manufacture, but the general principle was the same then as now. The finest examples of modern pipes are, like their old predecessors, handmade. Their artistic carvings are beautiful but are lacking in that significance which is probably rightly attributed to the patiently incised designs and laboriously made relief work found on certain prehistoric pipes. That we are unable rightly to interpret these old markings makes them none the less interesting.

I have been told of many Indian pipes that have, in the past, been found in this region—some of them quite remarkable, according to my informants. An endeavor to trace their present whereabouts has resulted in little success. Some have been sold, or given away and taken elsewhere; some have been destroyed by fire; some have been smoked for a time, and becoming broken, were discarded; others have just plain "got lost."

These pipes are from lake beaches and river banks, or were plowed out. None of them have been recovered from graves or were deeply buried. Most of them have been found accidentally. I was informed of one instance in which a pipe was discovered in an unusual way. A man while poling his canoe up Pleasant River, in Brownville, pulled out of the water a large stone pipe, the bowl of which just fitted on the end of his setting pole. That was luck. I have searched Penobscot waters more or less for over twenty seasons without having found a single pipe.

Manley Hardy, of Brewer, knew the Penobscot Indians—the manners and customs of their every-day life—better probably, than any other white man of his day or since. He once told me that when he was a small boy (perhaps seventy-five years ago) many Indians had home-made pipes which they carried with them, either in a “poke” or attached to their belts by a string. Later (how many years he did not state) he noticed that these native stone pipes had been almost wholly replaced by cheap clay pipes of the white man. In fact, they had become so scarce that he had difficulty in securing a few to save as examples of native workmanship. This seemingly rather abrupt disappearance of old pipes looked rather mysterious. But, he said, when one considered that such pipes were mostly worn out in service and that it would take an Indian days or weeks to make one to replace it, while a clay pipe could be had for a trifle, such scarcity seemed less unaccountable.

CLASSIFICATION AND DESCRIPTION OF PIPES

No one knows anything about the origin of the tobacco pipe, but it is supposed to have developed from a straight tube. This appears to be its earliest and simplest form—perhaps at first only a hollow reed or bone, or a roll of bark. Afterward it was made of more enduring materials and gradually became specialized into various somewhat different forms, though the tube or tubular pipe continued till the Discovery.

Mr. Joseph D. McGuire who has made a classification of Indian pipes, notes fifteen distinct groups or types found in the United States.¹ About a third of these types have been recognized in the Penobscot Valley, though some of them are rare.

At least one tubular pipe has been found here. The late D. T. Thompson, of Troy, N. Y., who occasionally visited the Penobscot on collecting trips, told me that he secured a fine stone tube—shaped like a cigar-holder—at Passadumkeag, where it was found. He valued it highly and on his trip home carried it, carefully wrapped, with a few other choice relics from this State, in a small

¹*Pipes and Smoking Customs of the American Aborigines*, by Joseph D. McGuire, U. S. Nat. Museum Report for 1897, Part 1.

hand bag. At the Boston station he left the bag while standing a moment at a ticket window, and that was the last known of it.

Another simple form of pipe, known as the Bowl, or Vase type, has been sparingly found on Penobscot waters. It is merely a pipe bowl—usually more or less egg-shaped—with a hole drilled through its side for the insertion of a stem. Mrs. Fifield, of South Brewer, has a pipe of this class made of a broken geode; being thus hollowed out, naturally, it needed only the drilling of the stem hole for completion. It is not, however, from the Penobscot but was found by her across the border in New Brunswick.

Another type, known locally as the Chunk pipe, or “Chunkey,” is, or was, more common here. It has a thick, rudimentary stem worked out at right angles to the bowl and is drilled with a large hole for a wood stem. Several of these are shown in the sketches.

Other types will be understood by referring to the sketches and descriptions accompanying them.

From the pipes I have examined and from what reliable data I have been able to secure, I conclude that the Micmac pipe is the most characteristic type found in the Penobscot valley.

The pipe shown in Figure 14, now in the Hardy collection at Brewer, is from Old Town. It was found many years ago at a depth of about a foot from the surface. Its color is a pleasing mottling of dark green and light yellowish brown. It is made of a



FIG. 14. Old Town. Full size.

more or less metamorphosed slate. This pipe is probably ancient, yet in shape and length of stem it is not far different from certain modern clay pipes. The bowl is not quite round, being somewhat flattened at the sides. The big bulge on the stem side of the bowl

is not hollowed out to give greater capacity and one wonders why it was made. Yet the more one studies Indian relics, the more he becomes convinced that what is frequently called individual whims of form, or "The Indian of it," had a definite meaning to the maker. In this case, the bulge was left, may be, for the future carving of a face or other device. The stem is very nicely drilled with a rather large hole. The bowl has been gouged out, or enlarged by gouging, as it is not round. It will hold about half as much as an ordinary T.D. pipe.

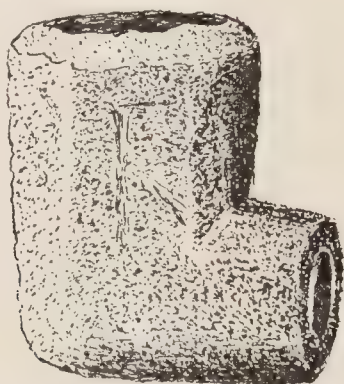


FIG. 15. Medford. Full size.

The pipe bowl shown in Figure 15 is owned by Miss Dinsmore, of Fairfield. It was found many years ago by her father on the banks of the Piscataquis River in Medford. Bowl and stem are squarish in shape, but the angles have been truncated somewhat, though not enough to make it symmetrically octagonal. It is made of soapstone and shows much wear.

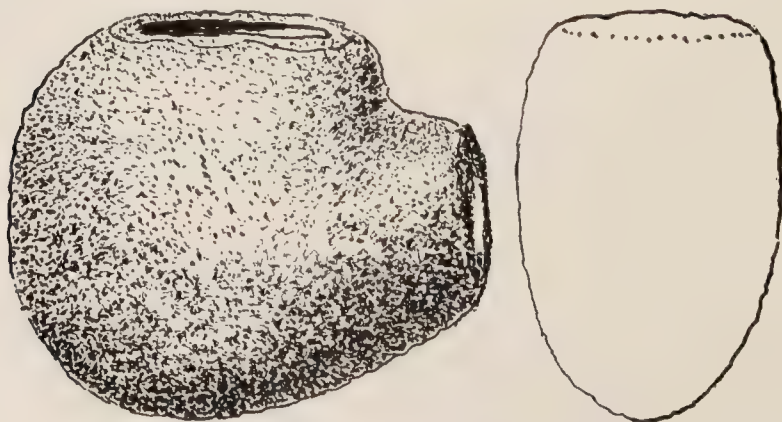


FIG. 16. Vicinity of Old Town. Full size.

Figure 16 represents a pipe in the Sewall collection at Old Town. It is black from long use. The material is sandstone. The exact locality where it was picked up is not definitely known, but it was somewhere in the vicinity of Old Town. It is a good example of the style which has been locally called "chunk pipe."

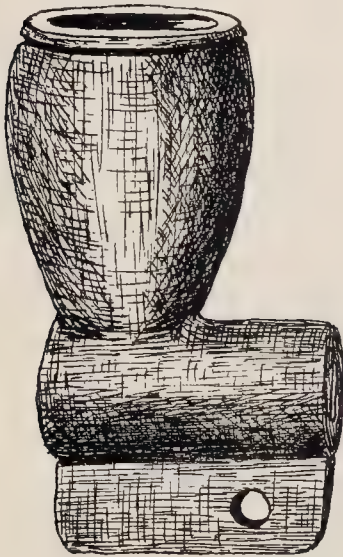


FIG. 17. Orson Island, Old Town. Full size.

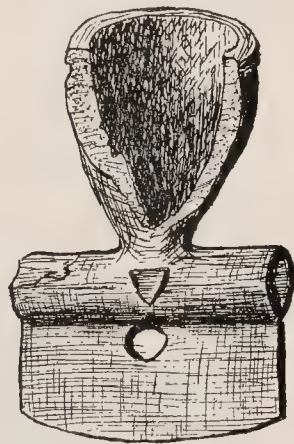


FIG. 18. W. Branch of Penobscot. Full size.

Figure 17. A black slate pipe found on Orson Island at Old Town, now in Fred N. Godfrey's collection. This pipe is plainly a Micmac, though a departure from the ordinary type as stem and keel extend in only one direction from the bowl.

Figure 18. A black slate pipe picked up more than fifty years ago, on one of the portages of the West Branch of the Penobscot missing. The keel is unusually thin and its bottom edge is convex. below Chesuncook by Mr. Henry M. Reed, of Benton. This little pipe is characteristically Micmac in type. A part of the bowl is The hole through the keel is made close below the stem instead of near the bottom edge, as in most examples. The outside of the bowl is finished in narrow, vertical panels about one-eighth of an inch in width. A narrow, nicely finished band encircles the top of the bowl. On the center of one side of the stem, just below the bowl, a small triangular, shield-shaped figure has been worked out in relief.

The gracefully formed little pipe shown in the sketch, Figure 19, is a fine type of the keel, or Micmac class. It is dark greenish-gray in color, and the rock is probably slate. Both top and bottom of the bowl are circular, but the bulging central part has sixteen sides or panels accurately made and finished at top and bottom with simple but pleasing serrations. The bowl narrows considerably toward the bottom and stands perpendicularly on the top face of a straight octagonal base, or stem, which extends equally in front and back beyond the center of the bowl; one end of this part has been drilled to connect with the bowl cavity and is intended for the insertion of a wooden or bone stem. Below the octagonal part and running its full length, is a thin but deep keel, ornamented like the octagon, chiefly with incised figures of saw-tooth pattern. A hole drilled through the keel very close to its lower edge is intended for holding stem and bowl together and to assist in attaching the pipe to a belt.

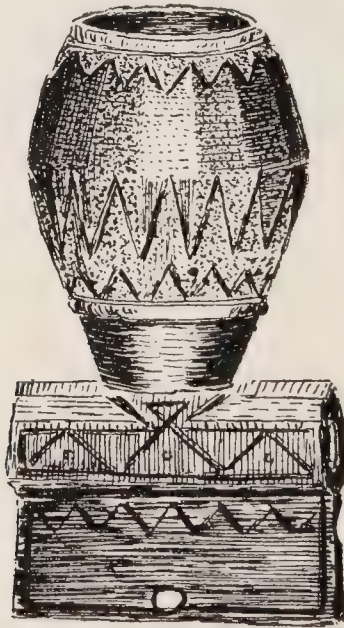


FIG. 19. Full size.

This pipe is not prehistoric but was secured by Mr. Hardy to illustrate Penobscot Indian workmanship. It is curious that it should be of Micmac style and suggests that our Indians copied the Micmac forms—something they were loath to do—or that the

so-called Micmac pipe originated on the Penobscot. However, this form is not confined to the Penobscot or to Micmac territory as, according to Mr. McGuire, it has been found from Labrador to Kentucky and north of the Great Lakes far to the west.

The most ornate specimen of this type described by Mr. McGuire is from the St. John River, Maine, and is shaped very much like this small pipe in the Hardy collection. Surrounding the bowl, however, are totemic carvings of four animals—bear, beaver, otter, and turtle.

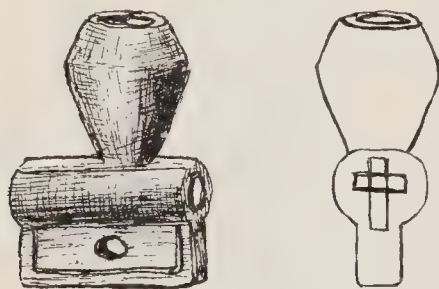


FIG. 20. Squaw pipe. Old Town. Full size.

The tiny pipe (Figure 20) now owned by Mr. F. N. Godfrey of Old Town, is known to have been in the possession of Penobscot Indians for about a century. Whether it was given to them or made or found by them is unknown. It is jet black and very smooth from much wear. The material is probably a dense slate. It is of characteristic Micmac type. Such small pipes are called, locally, at least, Squaw pipes.

The stone pipe in Figures 21 and 22 was found in 1879 by Mr. O. W. Whitten, on his land bordering Pushaw stream, in Alton. It is a very large and handsome specimen although part of the stem is missing. The bowl is four and one-quarter inches high and one inch and a half in diameter. The flat flange which finishes the top is two inches across and a little more than one-eighth of an inch thick. The inside of the bowl is carefully hollowed out and conforms in shape to the outside, the wall being very nearly of the uniform thickness of one-quarter inch. The hole through the stem is a little more than one-quarter of an inch in diameter and meets very accurately the bottom center of the bowl cavity. The stem is neither round nor flat, but approaches a triangle in cross section.

The material of which this pipe is made is a grayish soapstone. The gray color is shown in the broken stem; elsewhere there is a rich, dark brown glaze, through which gleam a few small flakes of mica.

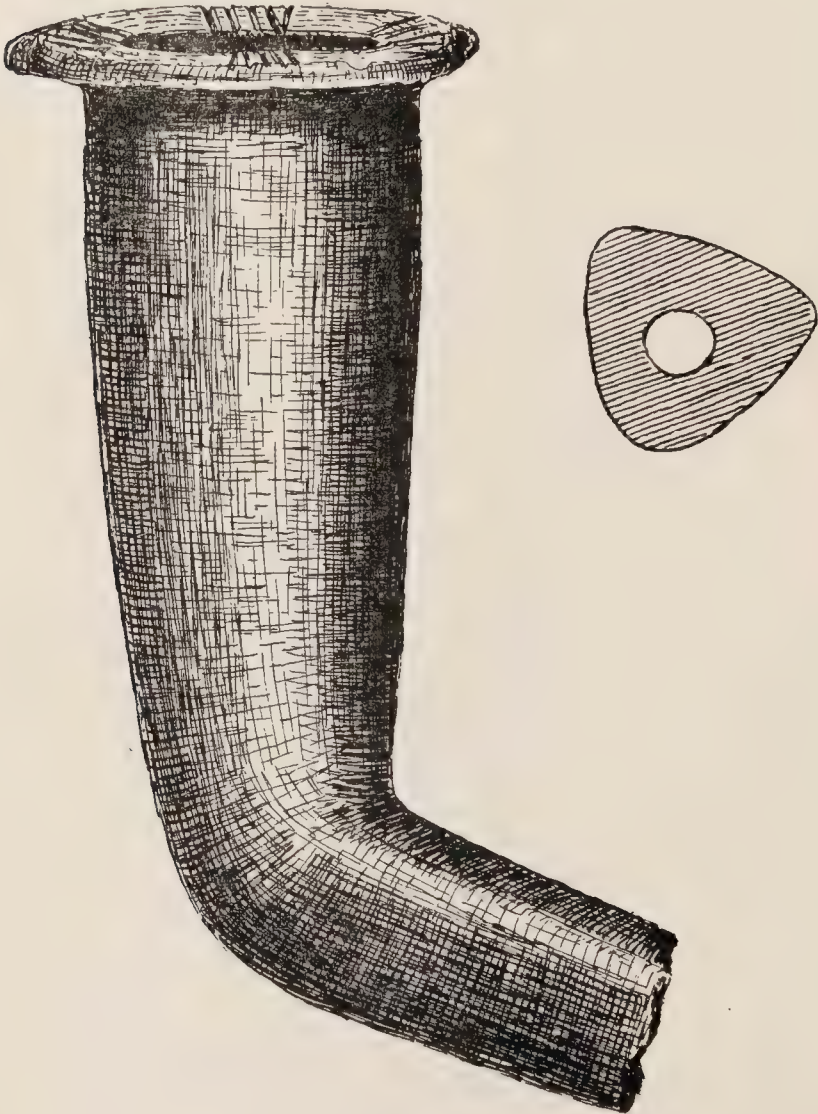


FIG. 21. Alton. Full size.

While this pipe cannot be considered as highly ornamented, there are a few incised lines which are worthy of notice. The top of the flange-like projection shown in Figure 9 is firmly scored with radial lines somewhat resembling Roman numerals on a clock



FIG. 22. Another view of the Alton pipe,
and detail of marks on flange. Full size.

face. The chief lines are arranged in four groups—three consisting of five lines each, while one group contains but four. In three groups a distinct “V” is shown. This part of the pipe particularly exhibits traces of much wear, and several faint and indistinct markings between the groups appear to be the deeper parts of older but similar lines now nearly obliterated. The right side of the bowl shows two long, but not very straight lines, joined by a short one at their bases. In front, there is also a long line incised lengthwise of the bowl, with eight very short lines, at approximately uniform distances apart, joining it at right angles (Figure 9). Possibly the marks on the flange which forms the top, from their quadrangular grouping, may be considered as intended merely for ornamentation. The rude lines on the front of the bowl, however, certainly seem to be tally marks or a record of some kind.

²Dr. C. C. Abbott illustrates a pipe of almost identical shape, from Isle of Wight County, Virginia. Although considerably smaller in size, it has the same kind of flange-like projection and joins the stem apparently at the same angle. It also is made of steatite or soapstone. The stem “is a flattened oval in section tapering gradually from the bowl to its termination.”



FIG. 23. A catlinite pipe from the Penobscot. Big Oak Eddy, Bradley. Full size.

²Abbott, *Primitive Industry*, page 320. Salem, 1881.

Figure 23. Mr. George Merrill, of Bradley, found this pipe about thirty-five years ago, imbedded in the sand at Big Oak Eddy, in Bradley, on the Penobscot river. It is made of red Catlinite, the typical pipe stone of the mid-west Indians, and the material undoubtedly originally came from the celebrated pipe stone quarries of Minnesota. Its shape is characteristic of the Siouan group. This pipe does not show file marks, however, and might have been entirely made with stone tools. Pipes of this material may be of considerable antiquity or quite recent. The solidly compacted sand said to have been in bowl and stem when found, indicated that its loss had not been recent. It is now in the writer's collection.

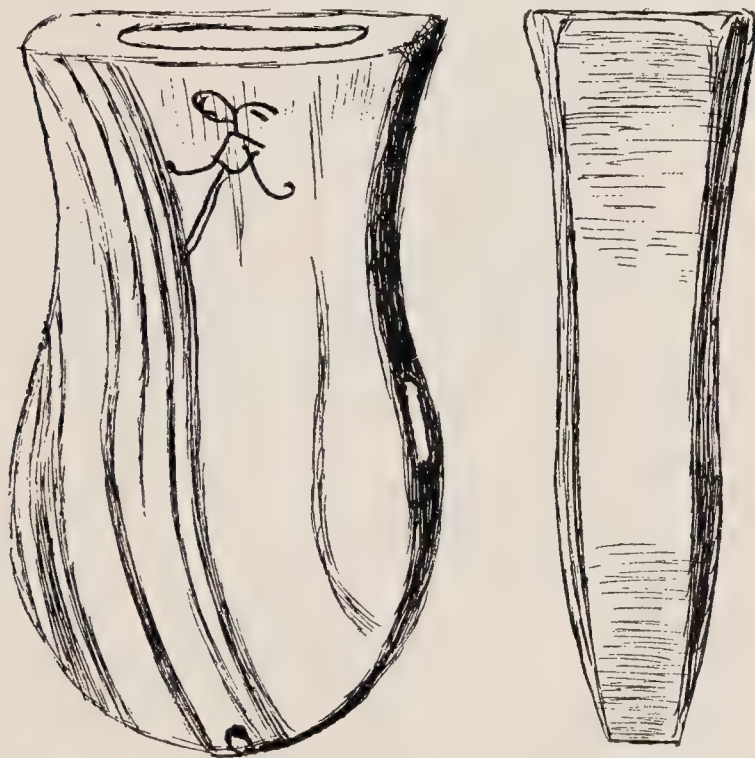


FIG. 24. Pipe made of banded slate. Passadumkeag. Full size.

An unusually interesting pipe is sketched in Figure 24. It is made of greenish-colored, banded slate—a favorite material for ceremonial objects but seldom used for pipes. It is thin, flattish, has a hole for suspension, and would unhesitatingly be called a pendant if it had not been hollowed out for a pipe. Probably it

has served in both capacities, hence is a combination object—a pipe-pendant. If classified as a pipe, it would be placed in Mr. McGuire's Bowl or Vase group.

Faint lines incised on one of its nearly flat sides depict a crudely-drawn human figure. A somewhat heavier, irregular line which nearly surrounds this figure begins at the top of one ear and ends at the top of the other. The ears are greatly enlarged and a distinct cross springs from top, middle of rim, and lobe of each ear. In addition to these six small crosses around the ears a larger cross of Celtic type, with branching ends, rises from the top of the figure's head. Scratches which may be intended to represent a swastika are found near one side of the head and are also connected to the upper part of one of the ears by a curved line. A similar line from the other ear leads to a faintly made design even less easily identified.

On the opposite side is incised a small figure, possibly intended for an Indian. A few other scratches appear meaningless. Fig-

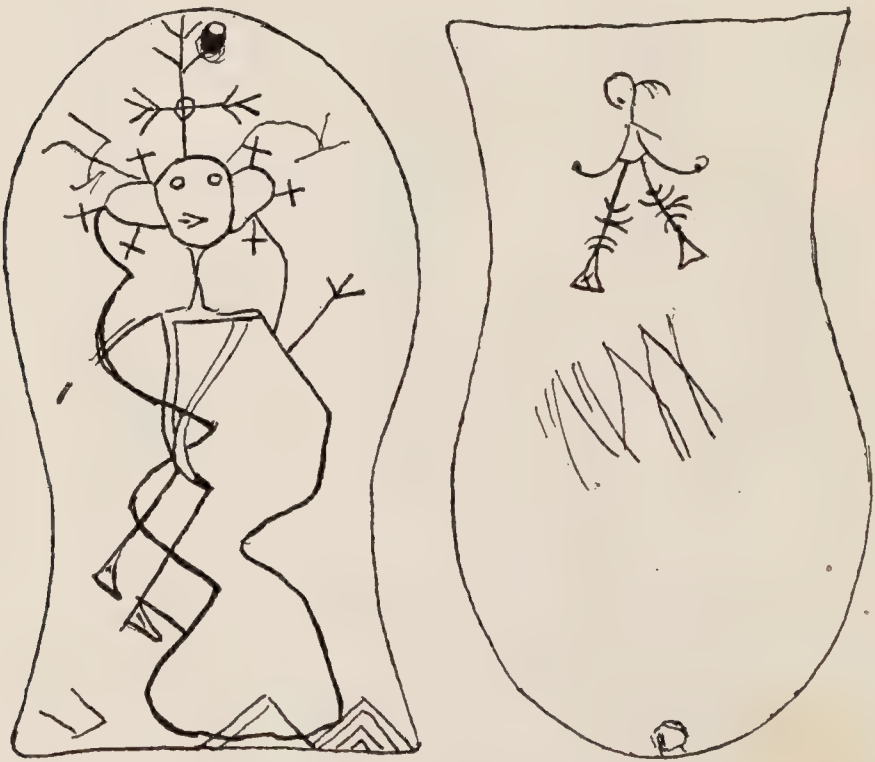


FIG. 25. Details of pictographs on Passadumkeag pipe. Full size.

ure 25 will give a clearer idea of this Indian drawing than a written description.

This pipe was found just above Passadumkeag village by Mr. White.



FIG. 26. A Passamaquoddy pipe. Full size.

Figure 26 is a sketch of another pipe also obtained by Mr. Hardy years ago from the Passamaquoddy Indians, the next tribe to the eastward of the Penobscots.

Its age is uncertain, but it looks old; the surface while smooth shows little undulations and inequalities which may be due to the use of stone tools. It is made of dense, fine-grained stone of uniform and handsome chocolate color. This variety of stone, so Mr. Hardy was told, came from the island of Grand Manan.

The most noticeable feature is the rather flat human figure carved in relief on the bowl opposite the stem side, as though hiding from the smoker. It is in a climbing posture with hands and feet hugging the bowl; its head reaches the rim but has a rather discouraged droop.

A very slight heel shows beneath the bowl, and a short keel-like projection is carved out below the end of the stem; through this a hole has been drilled as a help in tying on the wooden stem which must have been used with this, as well as with the majority of pipes found here. A roughly scratched groove encircles the bowl very close to its top, and a band is worked around the end of the stem.

Figure 27. Another example of the Micmac type. All the other pipes described in this article are made of stone; this one is lead. It is only one inch and a quarter high and three-quarters of an inch across the bowl. It weighs about an ounce and may have been made from a bullet. "Somewhere down river near the coast" is as near as I can locate the point where it was dug up.



FIG. 27. Full size.

Some of the pipes considered here are undoubtedly prehistoric. A few have been made within a century but are of native workmanship and patterned after ancient types.

If an exhaustive study were made of the so-called Micmac pipe, it might reveal considerable information regarding the people who have used it—their tribal relations and their wanderings.

The statement recently published that Indians could not have cultivated tobacco in this northeast corner of the country is wrong. They could have raised it here and no doubt did. To be sure, tobacco is not a profitable crop in this region, yet frequently a few plants are grown in our gardens as a curiosity and some seasons they grow willingly and well.

I remember that when I was a small boy, the owner of a farm which joined my father's raised and cured tobacco for his own use each year. Some of it he made into plugs by the simple process of

tamping the cured leaves into auger holes, or knot holes, in a post in his shed. Later the plugs were removed by splitting the posts open. People used to mention this product as "Uncle Plummer's Indian tanned tobacco." I have wondered if his process of curing it may not have been a survival of some ancient native method. One state of his procedure which I remember well, consisted of dipping the leaves into a sweetish liquid made, I thought, from maple sugar dissolved in water, though its taste was a bitter and sickly disappointment to the very small boy who surreptitiously swallowed a little of it.

I liked to watch this kind old man fill and light his long-stemmed clay pipe with a coal from the fire, and I longed for the time when I should be old enough to follow his example. Sometimes he would, like the old-time Indian, mix dried leaves of other plants with it. The pleased expression of his face after he had his pipe well lighted and had sent the first few puffs in various directions (then meaningless to me) proved his satisfaction with this home-grown product and suggested methods not many generations removed from those of our original smokers.

STONE PLUMMETS IN MAINE A CLASS OF PUZZLING PREHISTORIC RELICS*

Among the various types of ancient stone artifacts found along our Maine rivers, perhaps those we least understand have for us the greatest interest. Such types are usually of strange forms and of rare occurrence. But plummets, the class of relics considered in these notes, are of a familiar shape and cannot be called scarce, yet they possess an element of mystery.

DESCRIPTION

Plummets are so called on account of their resemblance to the metal plummets or plumb-bobs of masons and builders. Other terms sometimes used in describing them include "pear-shaped pendants," "sinkers," and "stone tears." They are, in general, more or less pear-shaped. Their larger ends are either rounded or somewhat pointed. Toward the top they taper to rather slim necks terminated by a small knob. Just below this knob there is usually an encircling groove. Some lack the knob but have the groove only. Instead of knob or groove, a few have a hole drilled through near the top.

Our Maine plummets vary considerably in size. The smallest one I have seen is an inch and a quarter long and weighs one ounce. The largest ones are seven or more inches in length and between four and five pounds in weight. Those less than two inches long or more than four are uncommon. The average size is about three inches in length and an inch and a quarter in diameter. The average weight is about three ounces. The majority are round in cross-section and symmetrical, but some are more or less flattened and irregular. A few are long and slim; a few are nearly globular except for the attaching knob. A very few have one side flattened apparently purposely, but the reason is unknown.

Numerous varieties of stone were used in the manufacture of plummets. Among the kinds identified hereabouts are: diabase, sandstone, limestone, quartzite, slate, soapstone, granite, firm shales, schists, and gneisses. Other rocks, mainly metamorphic and igneous, were used—apparently pebbles picked from the glacial drift so abundant locally. The precise variety of stone,

*Read at a meeting of the Bangor Historical Society, April, 1926.

whether hard or soft, seems to have had no significance, but I have never seen a plummet made of white quartz, of the Kineo quartz-porphry, of flint, or of any flint-like stone.

It is obvious that most plummets were shaped with hammer-stones, as the characteristic pebbled appearance of their surfaces shows. Some were further smoothed by rubbing, but none are polished. Those made of the softer stones, soapstone and some slates, were scraped into shape.

Rarely a plummet is found which has been laboriously carved, possibly as an experiment in ornamentation. In one example a cutting away of the surface has been so done that angular patches stand in relief. The commonest markings found, however—and these are rare—are straight, firmly scored incised lines that meet or cross at various angles. Such inscriptions undoubtedly held a meaning, but what no one now knows. A very small percentage of plummets are worked into forms remotely resembling animals, or animal heads. These are known as effigy plummets.

Notwithstanding their numerous variations—no two being precisely alike—plummets form a distinct group, easily recognized, and merge less with other groups than most classes of Indian relics. It is plain that whether knobbed, grooved, or perforated they were designed for the attachment of a cord for suspension.

There has been some speculation about just how this cord was tied to permit a plummet to hang straight. An old sailor showed me several methods that would have done. I remember one way, perhaps because he said it was sometimes used in suspending unglazed pottery water bottles by the natives of southern islands. He exemplified thus: "Loop the string, then make another loop. Pull that loop through this one, so! Then take hold of the string about there and pull it through here—and there you are. She hangs straight and the harder you pull the tighter it hugs." Easy, if one doesn't forget!

The knot just described—I do not remember its name—may or may not be like that originally used. Anyway, it is of far less import than what went with the other end of the string.

SKETCHES OF PLUMMETSS

A variety of plummets are shown in the accompanying sketches:

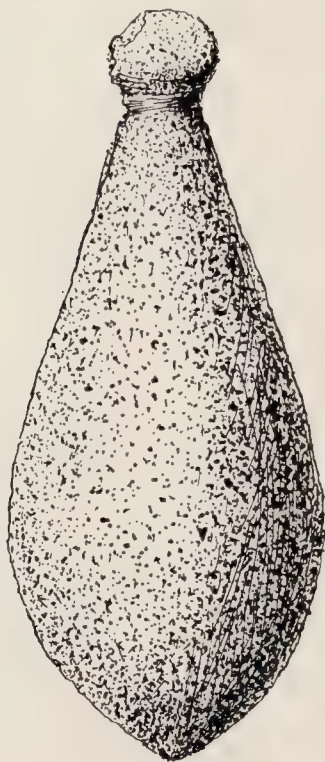


FIG. 28. Full size.

Figure 28. A plummet of average size and form. It was found in Bradley, on plowed ground near the Penobscot.

Figure 29. Six surface plummets. Four are from Eddington. The lower one, on the left, is from Veazie. It is flattish and may have had a secondary use as a rubbing stone. The material is a brown sandstone. The lower one at the right is from Passadumkeag.

Figure 30. A large plummet said to have been found in Bangor, on Kenduskeag Stream, more than seventy years ago.

Figure 31. Another large example washed from the river bank in Bradley, by the spring flood in 1923. Note the groove across the top.

Figure 32. Three uncommon plummets from the Tarr Red Paint Cemetery at North Warren, near White Oak Pond, Georges Valley.

Figure 33. Two remarkably symmetrical forms from the Godfrey Red Paint Cemetery at Old Town.

Figure 34. A perforated specimen from the Haskell Red

Paint Cemetery, Bluehill. Material soft, probably soapstone. Scraped instead of pecked.

Figure 35. A rare shape from the Hathaway Red Paint Cemetery at Passadumkeag.

Figure 36. An unfinished plummet from Indian Island, Old Town.



FIG. 29. Surface plummets. Size about 2-3. The three in top row are much weathered.

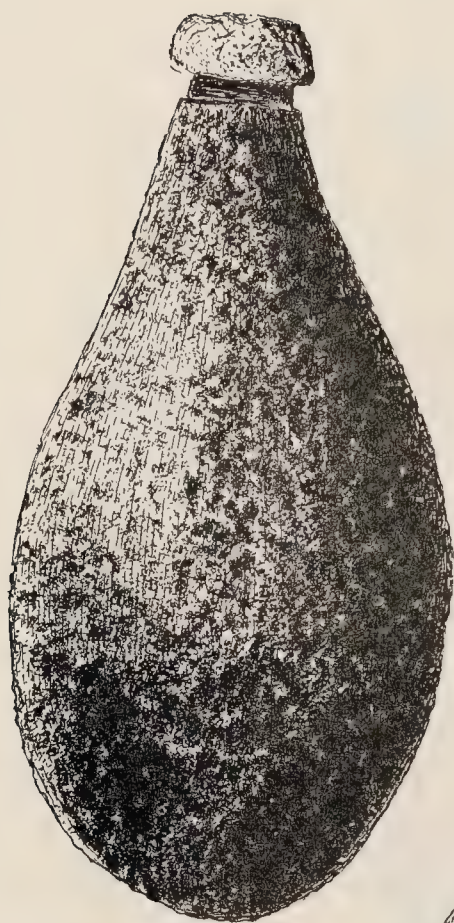


FIG. 30. Size 2-3.

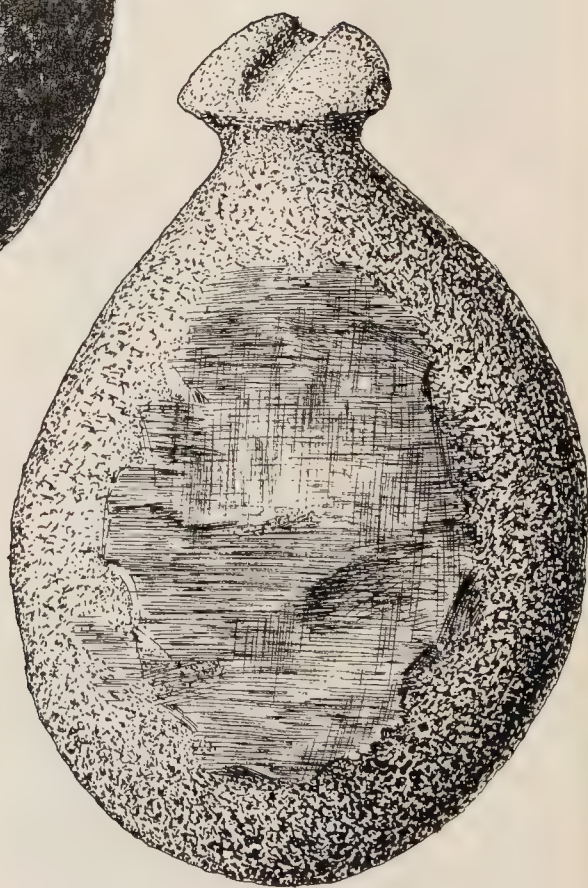


FIG. 31. Size 2-3.

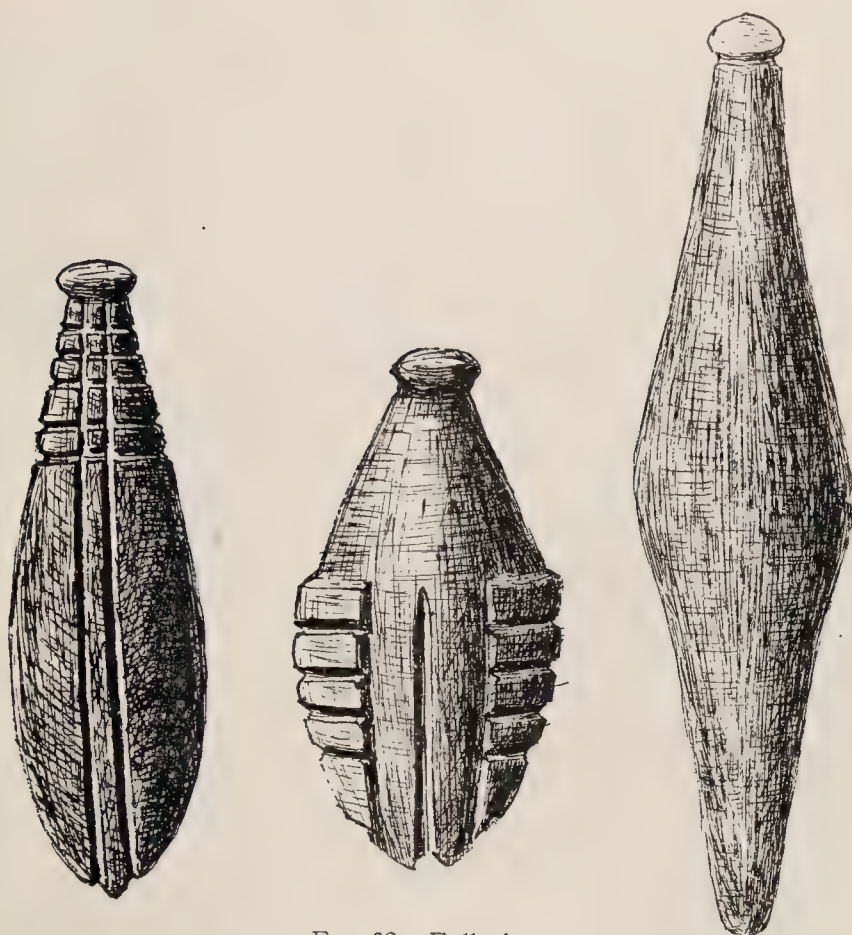


FIG. 32. Full size.



FIG. 33. Full size.



FIG. 34. Full size.



FIG. 35. Full size.

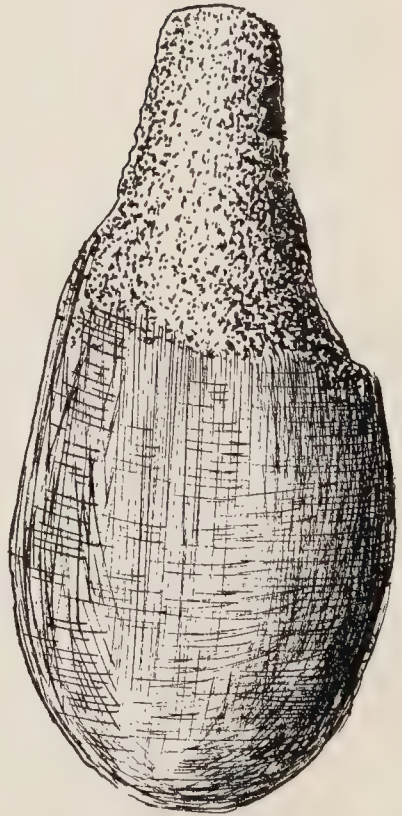


FIG. 36. Full size.

OCCURRENCE, AGE, AND MANUFACTURE

The Red Paint People, so called on account of large quantities of red ochre deposited in their graves, are known to us only by the contents of their cemeteries. These have been found so far only in central Maine, mainly on Penobscot, Kennebec, St. George, and Union River waters and at a few bays near the coast. These cemeteries are believed to be among the most ancient in North America, and in them are found, along with other stone implements, many plummets. Since plummets so found cannot be of lesser age than the graves in which they are buried, we have here a clue to their relative antiquity.

While many of our finest plummets have been recovered from such burials, others have been found on the surface. In my collecting experience I have noticed that surface plummets—those not purposely buried—are rarely found outside the area in which cemeteries of the Red Paint People occur. Within this area, while they are not abundant, many have been picked up. In general, these exhibit very marked effects of weathering and are evidently very old. Hence we believe them to have once been the property of the Red Paint People and not of the later tribes that afterward occupied the same territory and in whose ossuaries no plummets are found.

Many partly-made plummets have been found, particularly within the Red Paint territory. Examples show all stages of work, from those hammered only a little in beginning a neck, to the nearly completed article. Some were discarded on account of breakage. No materials other than those which might have been found hereabouts are noted.

Thus we have evidence that plummets were of local manufacture, at least to some extent.

Now and then a plummet is found in a coast of Maine shell-heap, but they are too scarce, by far, to have had any importance in the industry that produced such heaps. They were probably found by members of Algonquin tribes and saved as we now save them, as curious and tangible evidences of ancient predecessors.

Plummets have been found, but far less frequently, elsewhere in New England, and, to some extent, in every state as far west as the Mississippi River. Between that river and the Pacific

Coast they are practically lacking. In certain localities in California they are said to be numerous; also Florida has yielded many.

What relation in age or use there may be between the plummets of distant places and our Maine objects I do not know. No attempt has been made to correlate them in these notes.

CONJECTURAL USES

Where many prehistoric artifacts of a class are found, the purpose for which they were made is generally obvious. This is true of arrowpoints, spearheads, axes, chisels, etc. What they were made for is suggested by their shapes, but this clue does not apply satisfactorily to plummets.

In reality plummets may have been designed for more than one purpose, or have served different purposes at different far-apart times and places. However, it is unreasonable to suppose that they were put to so many different uses as have been assigned to them by the many persons who have studied them and expressed an opinion.

Some of these suggested purposes are that they were used as plummets, sinkers, bait, net weights, ornaments, pestles, badges of penance, emblems of sorrow, stoppers for skin bottles, bolas, or string twisters in connection with netting or weaving; also that they were somehow employed as medicine stones, talismans, fetishes, amulets, or charms in connection with religious or superstitious beliefs.

There is no proof that any of these suppositions is right.

A few years ago a mason while building a chimney in a near-by village was observed to be actually using one of these ancient stone plummets. But the idea that aboriginal people so employed them is unreasonable.

Their use as sinkers in line fishing at first seems natural—they certainly could have been used thus—yet if employed merely as weights, why are they so well made? Furthermore, there is no other indication that the very ancient Red Paint People caught fish with lines. One man's idea is that plummets were used in fishing before hooks were known and that they were baited. His explanation is that a piece of entrail was drawn over the plummet and tied near the top. Fixed in this bait—points up—were a num-

ber of sharp fish bones or thorns, hugging the plummet. When this lure was swallowed by a fish, a pull on the line caused the thorns to spread out like the ribs of an opening umbrella and a sure catch resulted. An experienced fisherman, when asked his opinion of this, said, "No fish would swallow a contraption like that. It is too heavy for its size. Fish are mighty particular about the ballast they take aboard. But," he added, "small animals might have been caught with it same as in a trap. Only with this thing the trap would be in the animal instead of the animal in the trap."

The majority of plummets are too light and also too well made to be seriously considered as net-weights. Besides, found along our rivers are flattish stones, notched on opposite edges, that undoubtedly were used for this purpose. It may be of interest to note here that the plummet represented in Figure 30 was bought of a dealer in second-hand furniture in this city. It was in a small *lignum vitae* mortar, and was said to have been thus used—as a pestle—for more than seventy-five years in the family of one of Bangor's early settlers.

It will be noted that the shape of a plummet may also be likened to a falling drop of water, or an artist's representation of a tear drop, hence the term, "stone tears," sometimes locally applied to these objects. This fact, coupled with their prevalence in cemeteries of the Red Paint People, has given rise to the sentimental theory that they in some way were intended to represent sorrow.

I will mention one more instance which shows another adaptation of this ancient artifact to a modern use. I was told of a very large plummet that had been found several years before by a man while digging sand at "The Eddy" in Veazie. Calling at his house, I was shown the largest plummet that I had ever seen. I think it must have been ten inches long. It was about the size and shape of bottles that used to hold beer, if I remember right. I wanted to add that specimen to my collection, and made a liberal offer for it, but the owner "guessed he would keep it a spell longer." Urged for his reasons he said, "Well, I found it myself." That sentiment I respected. "Also," he added, "my teeth are getting poor and I don't know what my wife would pound beef steak with if I let it go." I didn't get it.

The list of supposed uses might be extended and useless comments made thereon, but, at best, such theories are mere guesswork. If one should hit upon the right answer he has no proof that it *is* right, and so the guessing goes on!

SOME QUOTATIONS

In Volume I of Williamson's *History of the State of Maine*, written nearly a century ago, is the following concise description:

"A most curious article is the stone pendant, shaped like a pear. In length it is three inches and a half, and four and a half around the bulb. It is too heavy for the ears, too clumsy and ill-shapen for a bosom ornament, and yet too much wrought for any minor use. It has been many times shown to the Indians of different tribes for an exposition of its use, without obtaining any satisfactory information."

Mr. C. C. Willoughby, of the Peabody Museum of Cambridge, Mass., the first man to conduct scientific explorations of the Red Paint Cemeteries, says in his report, (1898):

"*Pear-Shaped Pendants.* Many of these puzzling objects were taken from the graves. In several instances a pendant was, with the exception of the red ochre, the only perishable object deposited with the dead. Other graves contained two, three, and sometimes four or more. * * * * These pendants occurred outside the deposits of ochre more commonly than the other objects and frequently at varying depths in the same grave."

TENTATIVE DEDUCTIONS

From our present knowledge of the plummets found in Maine we may reasonably infer:

- (a) That plummets were made in Maine.
- (b) That the majority at least are very ancient.
- (c) That they occur here in greater numbers than they do elsewhere.
- (d) That no place is known where they were earlier employed than in the "Red Paint" area of Maine, the location of their greatest concentration.
- (e) That their use was discontinued with the passing of the Red Paint People, or if continued by later tribes, it was in a

greatly restricted way for a minor purpose and lacking in its original importance.

- (f) That the problem of their purpose is not yet solved.
- (g) That no satisfactory solution can be made by a study of plummets in themselves, but possibly one may be made if future discoveries shall reveal more knowledge of the coming and goings and customs of our very ancient and mysterious predecessors, the Red Paint People.

A VILLAGE AND BURIAL SITE ON THE PENOBSCOT
RIVER NEAR BANGOR, MAINE, SHOWING DIF-
FERENT PERIODS OF OCCUPANCY BY
PREHISTORIC MAN*

Before dams were built across it, the Penobscot, particularly between Bangor and Old Town, had many rapids. Even during the coldest weather such places did not completely freeze over, and the first annual movements of the numerous varieties of fish, each in its own time, coming up in great numbers from the sea could be easily detected. These places, too, and the pools below them served at all seasons as drinking spots for man and beast and resting stations for bird flocks during stormy periods in their north-and-south journeyings—and near by prehistoric man tarried and began his system of watchful waiting.

If there was a bluff near such open water, particularly a high bluff whose sharply cut bank brought it so near the shore that it almost overhung the margin of the water and whose top sloped back and somewhat downward from the river (a rather rare occurrence), there had Nature assembled ideal surroundings for the location of a stone-age village. Water and wood, nuts and roots and herbs, beasts and birds and fish, poles for lodges, shafts for spears, and frames and bark for canoes! Along the shores were boulders and cobblestones and pebbles of the greatest glacial variety, from which he could select the right kinds for knives and spears and arrows, and the right kinds for axes and celts and gouges, and the right kinds for ornaments and charms and offerings! Clay was easily procured from raw-edged banks for pottery, and sap from sugar-making maples to boil down therein. One or two outgoing tides floated his canoe southward down the broad highway to the sea and the treasures of its waters. Days or weeks or months of paddling up the narrowing river took him to unnumbered lakes in the game-trailed woods of the north and by short portages to other river systems and out into the great world as far as his courage and inclination, the span of his life and the great continent-surrounding oceans permitted. For wherever on this continent man goes now it was possible for man to go then.

And situated thus, at Eddington Bend within a few miles of Bangor, near the former head of tide, is the site of one of these

*Read at a meeting of the Bangor Historical Society, October, 1920.

ancient villages. This particular village seems to have been abandoned before the arrival of the white man. The soil has been cultivated or pastured for considerably more than a century. When it is freshly plowed, abundant evidence of man's occupation of the spot as a village site is shown in the characteristic blackened soil, "rejectage," and occasional relics.

Some of the relics, particularly slate lance-heads, plummets, gouges, and adz-celts, though mostly fragmentary, are characteristic of the Red-Paint horizon. For this reason and with the hope of locating a cemetery of the Red-Paint People, or of finding proof that this site was occupied by them for a village, the writer has done considerable systematic prospecting and digging in and about this area as his time permitted during the last few seasons. This work has consisted of boring, digging test holes, trenching, and excavating. It was necessarily slow, as the rich top loam had to be carefully replaced to prevent injury to the field. There were no surface indications of favorable locations for digging, as long cultivation has smoothed out and leveled off whatever prehistoric modifications of its natural topography might have existed. Judging by the prevalence of relic-bearing debris, the village itself was situated a short distance from the edge of the river bank—just far enough to be out of sight from the water. Here the darkest colored dirt and the most numerous fragments are found on a strip of land about seventy-five feet wide by four or five times as long, parallel to the river. This dark dirt varied considerably in depth, but in most places was shallow enough to have been reached through by deep plowing. Wherever test holes showed a greater thickness or a disturbed condition of the underlying soil, digging was resorted to. In this manner quite a number of fireholes were discovered and other ancient pits of varying sizes, dug for unknown purposes. But in neither soil, fireholes, nor pits were relics found which differed noticeably from surface specimens. Indeed, complete artifacts were rare, but many small fragments of pottery, discards, and chips were encountered.

The fireholes were mostly near the bank and shaped like inverted cones. They are two and one-half to four feet deep and three to five feet across. They show the effects of fire and are filled with fire-burned remains, ashes, charcoal, and stones. In one or two a few fish vertebrae were seen and white layers of ashes

like that from burned cedar bark. The location of these holes suggests that they may have been for signal fires.

Many other places were found in which there is a concentration of materials similar to those of the fireholes, but they are shallower and broader—saucer shaped. These probably represent lodge fires, as they are in the area which seems to have contained abodes. A few relics were found in and about these places—mostly arrowpoints, hammer-stones, scrapers, and knives; also fragments of pottery were rather common in these shallow holes.

Two places where the dark colored under-soil was dug out revealed straight trenches about three feet in width and depth and sixteen to eighteen feet long. Many fire-reddened stones, weighing up to two or three pounds each, were found near by, also a few broken blades which may have been large knives or spearheads, and pieces of gouges, or celts, with slightly curved cutting edges, were scattered about within a foot of the surface. A possible explanation of the use for these trenches is that they were made for canoe molds.

In none of these holes nor in other places where the soil had been disturbed to a depth of from two to three feet were any traces of red paint found. It may be mentioned here, however, that fragments of worked slate, as well as a few sections of slate lanceheads, and several unfinished pear-shaped pendants were found during this digging. These, together with the types of specimens previously found in hunting and re-hunting the plowed ground of this area for many years, will be mentioned later.

While certain relics and many fragments indicate a Red-Paint period village, many other objects are surely identical with those of more recent stone-working tribes. Still others seem to belong neither to the Red-Paint culture nor to this later period. Fortunately further evidence was discovered near by.

CREMATION PITS

Adjacent to this village site, on a gentle slope of slightly higher land, several acres were plowed late in the fall of 1915. This plowing was deep, and the upturned furrows showed at two points small, jet black areas of perhaps two feet across. The black substance was very fine in texture and seemed to be lampblack mixed with small bits of calcined bones, badly broken arrowheads, spear-

points and charcoal. The soil was damp and all these fragments were as black as the substance in which they were imbedded—a condition which soon affected the digger's hands and clothing. Test holes dug near by soon showed the presence of a similar but undisturbed deposit. This, carefully excavated, was found to be a bowl-shaped pit about three and one-half feet across and two feet deep. It contained the incinerated remains of bones and many fragmentary relics imbedded in a dense mass of lampblack and ashes.

Other pits were located and a few were dug out, but freezing weather and a heavy snowstorm stopped all further investigation at a most interesting point. Instead of a Red-Paint cemetery evidently one of black paint had been found.

The next spring, as early as the season and my time permitted, work was resumed. Altogether eight pits were found within an area of twenty by twenty-five feet. They were covered by eight or ten inches of top soil and were approximately thirty inches deep.

In one case two were in contact, in another probably three, but the latter were bunched so closely that a single number is given this pit. The single pits varied but a few inches from a diameter of three and one-half feet. The contents of all were similar and showed effects of very hot fires. The lampblack, or fine black carbon, surrounded everything, but was densest in the centers of the pits. The outside wall and bottom were marked by a more or less clearly defined zone of dark purplish-brown ashes and baked earth, and proved clearly that the contents of the pit had been bundled up and burned in place. Broken arrowpoints and spearheads were very numerous, mostly lying on top of the bones or mixed with them in the upper part of the pits.

OBJECTS FOUND IN THE CREMATION PITS

Perforators and Drills

So-called perforators or pieces representing them were found in every pit but one—from two to six or eight in each. These are the most characteristic objects among the deposits. No more careful or delicate chipping is known than that exhibited by some of these relics. A very few are entire, a few others, though badly



FIG. 37. Side and edge. Full size.



FIG. 38. Full size.

broken, have been restored by cementing the pieces together, but the majority were so badly shattered by fire that they are irretrievably lost. Figure 37 shows one of the thinnest. This was found complete. Figure 38 is another one of a white mineral resembling opal but too badly changed for identification. The majority are of the above extremely thin types, but some are thicker and correspond to the so-called drills. Figure 39 shows the longest one found, complete except for point. A cross section is nearly square. Figure 40 is pointed at each end.

Perforators and drills are rare on the Penobscot and it is surprising to find so many in these pits. Judging by the pieces found, no fewer than forty were buried here.



FIG. 39, Drill- like object. A remarkable example of "flint" chipping. Full size.



FIG. 40. Full size.

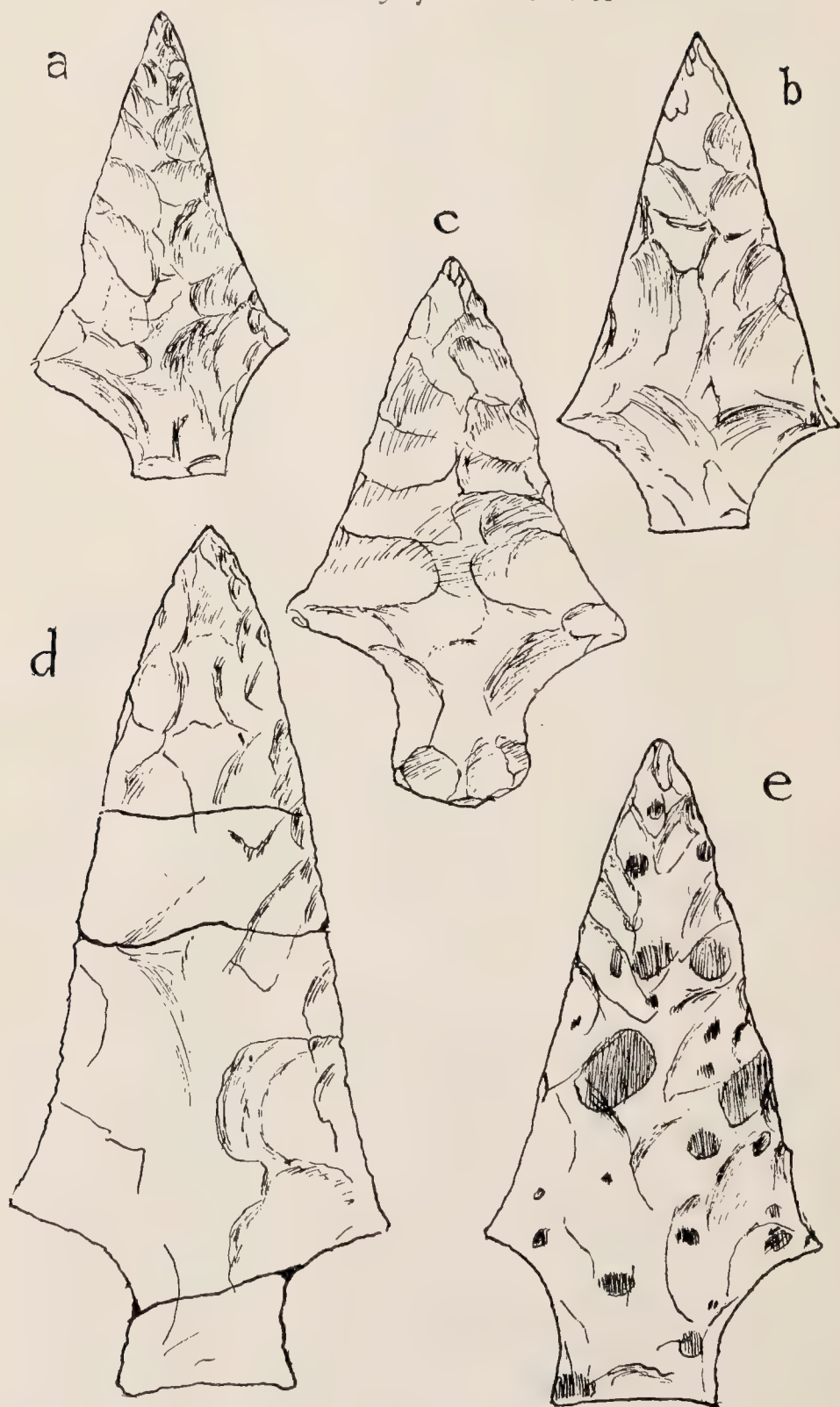


FIG. 41. Very thin spearheads of the Perforator Makers. Note flare of shoulders. Scale, not quite full size.

Spearheads and Arrowpoints

It was plainly seen that nearly all the chipped blades—arrow-points and spearheads—were very thin and remarkably well made, but they formed such a jumble of fragments, some being partly fused by fire, that it was found hopeless to fit a majority of them together. However, a few escaped breakage. These and the ones that could be fitted together make a total of 45 complete or nearly complete examples saved, of a total of probably 150 that were originally buried.

Some of these are spearheads, others are undoubtedly arrow-points, but the majority are of that half way between size, annoying to classify. The largest blades seem to be broken the worst; pieces found indicate a total length of eight to ten inches for a few, while the longest complete one is a little under five inches. But whether large or small, they are, with few exceptions, remarkable for their thinness and uniformity of shape and their decided flare at the shoulders. Figure 41, a, b, c, d and e shows the outlines of a few average examples correctly, but fails to do justice to the chipping.

Knives

Some of the objects described above may have been used as knives, but among the fragments are pieces representing about a half dozen blades having a plano-convex cross section that almost certainly were knives, but enough material to complete a single specimen was not recovered.

Scrapers

Two scrapers were found—they are made of milky quartz and both were broken. They are without stems and are of the ordinary types found so plentifully hereabouts.

Quite a variety of minerals and rocks are represented by these chipped articles. Among them the Mt. Kineo quartz porphyry is rather prominent. In some of it the ground mass is changed to a purple color, some is in spots coated with glass from partial fusion, and much is broken into small, jagged, angular fragments defying reassemblage, yet showing surfaces of the original painstaking chipping.

A small percentage of blades were made of ordinary milky quartz—and well made—but none remain entire.

Perhaps the majority are made of a dense, unidentified rock, showing a favorable working conchoidal fracture and a present light gray color.

Some are of igneous types not easily recognized but not found heretofore, as far as I am aware, on this river. Not a single article of flint was found.

Gouges

No complete gouges were recovered, but pieces of at least four individuals were found. As far as observable they closely resemble those from Red-Paint finds, but none are of the same materials as the Red-Paint types.



FIG. 42. Chipped celts of the Perforator Makers. Size, about 3-4.

Celts

The remnants of at least sixteen of these tools were found in all, but with few exceptions they were too badly broken for restora-

tion. Many of the pieces showed a rounding of solid angles analogous to spheroidal weathering. Apparently some were well made and nicely finished originally. A few of the smaller ones were not so badly broken, but these are chipped into shape and show no rubbing or polishing except just enough to bring them to an edge. Figure 42 shows three of these hatchet-shaped blades. Celts made in this manner are rare hereabout as surface finds, although pecked and ground examples are as common, at least, as spearheads.

Adzes

A piece of a celt-like implement was found just at the edge of the burned zone near the bottom of one of the pits. It was not much injured by fire although plainly showing effects of heat. The fracture was smooth as it had occurred along an old diagonal seam. The sharpened end was gone nor could it be discovered by the most painstaking redigging. More than a year afterward the missing part was found on newly plowed ground about 30 feet from the pit. The complete tool, Figure 43, was no doubt hafted and used as an adz. Two raised ridges about three inches apart

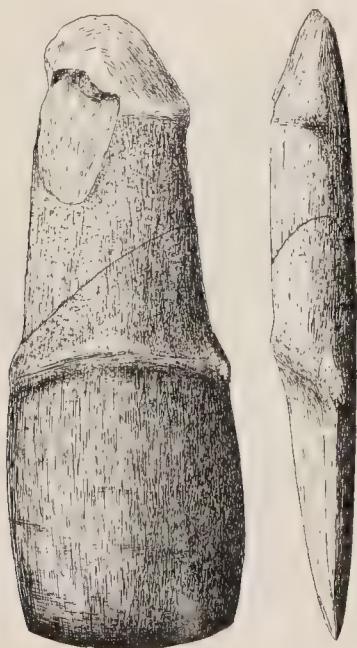


FIG. 43. Adz blade. Perforator Makers. Size, about 1-4.

extend across the back, one just above the blade proper and the other, less prominent, close to the upper end. The blade is symmetrical and exceptionally well made, most of the pitting caused by hammering it into shape having been obliterated by subsequent grinding. The material appears to be a fine-grained diabase. It may have been used as a hoe in digging the pit and a broken part left in the hole where it came in contact with the fire. A somewhat smaller tool of the same general shape was picked up on plowed ground of the village site several years before.

Other Stone Objects

Several rubbing stones, or whetstones, were found and one crescent-shaped piece of sandstone which may have been a simple rubbing stone, or may belong in the problematical class. Nothing else was found that suggests the ceremonial unless the perforators should be called such.

A small piece of sandstone with several deep grooves crossing it in different directions and obviously used as an arrow-shaft smoother was just at the outer edge of the fire zone in one of the pits. Figure 44.



FIG. 44. Full size.

Two pieces of pure graphite were together in one of the pits and are the only things recovered from any of them that were uninjured by fire.

Bone Tools

So many bits of calcined bone were found—too small for identification—that little care was taken to save much of it at first,

or even to examine it as closely as should have been done. Thus it is not improbable that interesting remnants of some of this material were overlooked. Happening to notice that a small fragment of bone had apparently been worked, the writer kept a sharper watch thereafter, and pieces of bone chisels, gouges, and awls were found, also a few examples with diamond-shaped points which appear to have been bone counterparts of the stone perforators.

Human Bones

As previously stated, small bone fragments were numerous. They had been pretty badly burned, crumbled easily, and were hard to save. It was suspected of course that they were human. A small lot was kindly examined by Dr. William C. Mason of Bangor, who identified several as positively not human. Others he said might be human but were too small to be certain about. A few rather larger pieces were found in a pit discovered later, and these have recently been sent to Prof. Warren K. Moorehead, at Andover, Mass. He took them to Dr. E. A. Hooton, of the Anthropological Section of the Peabody Museum of Harvard University, who recognized them as human and identified by name the various parts. Dr. Glover Allen, of the Museum of Comparative Anatomy, concurred with the opinion of Dr. Hooton. The doctors found in the lot, in addition to the human bones, a couple of bones probably of a large fish.

Thus we have fragments of human bones, animal bones, bone tools, and a surprisingly large number of stone relics pretty badly mixed and mingled with the ashes of less tangible things in these fire pits, which were without doubt primarily intended as graves for human beings.

If any definite arrangement of the contents of these graves had been originally made, the destructive fires would necessarily have obscured it. Yet as the digging proceeded it was noticed that spearheads, arrowpoints, perforators, and the few scrapers occurred near the top of the deposit mixed with bone fragments, and that the celts and gouges were invariably found at the bottom beneath the bones.

In the upper part of one grave, close to its northern edge, four small spearheads were found in contact in parallel orientation pointing north. One was nearly perfect, but the others were fire

cracked and fell to pieces upon being removed. Directly south, on the opposite side of the grave, a discolored brown streak projected out and slightly upward—like the handle of a frying pan—till cut off by the top soil. Apparently spears had been placed across the grave, pointing north, the grave had been covered with soil, and the spaces between the spearshafts had served as a chimney for conducting smoke from the smoldering fire.

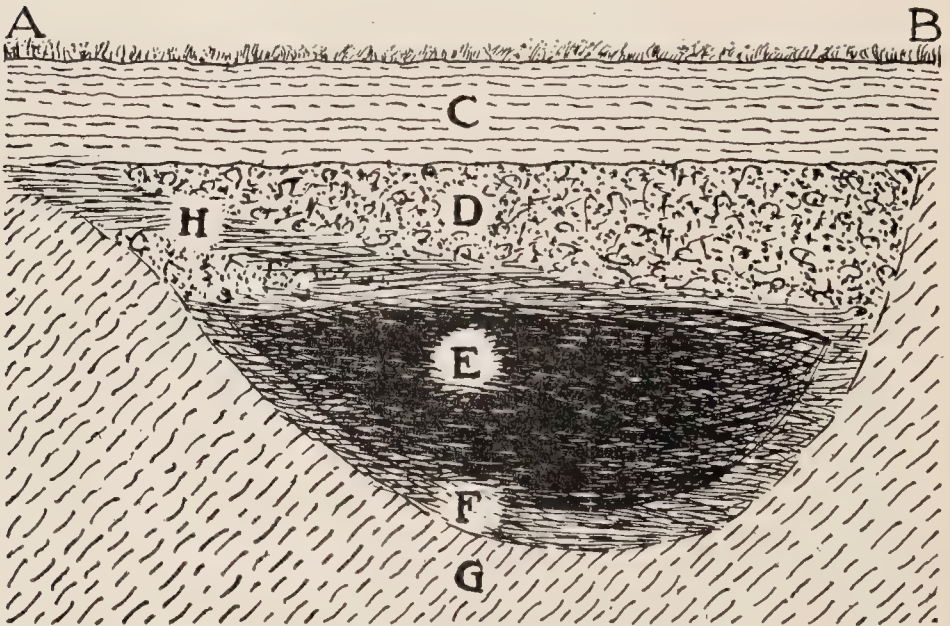


FIG. 45. Vertical cross section A, B, through cremation Pit 6. C. Cultivated soil. D. Disturbed sand. E. Black mass containing bone fragments and fire-broken stone relics. F. Discolored zone. G. Undisturbed sand. H. Discoloration supposed to be from spearshaft smoke vent.

Figure 45 shows a north-south cross section.

At the time when these things were being dug out, it seemed that great care was being taken not to overlook anything; afterwards, during long winter evenings when efforts were made to puzzle various fragments together, it was suspected that important little pieces might not have been saved. I have thought since that a better way than pawing the dirt over with a trowel or brush would be to carry the entire contents of such deposits in pails or boxes to the river edge and wash the dirt away in a manner similar to that in gold panning.

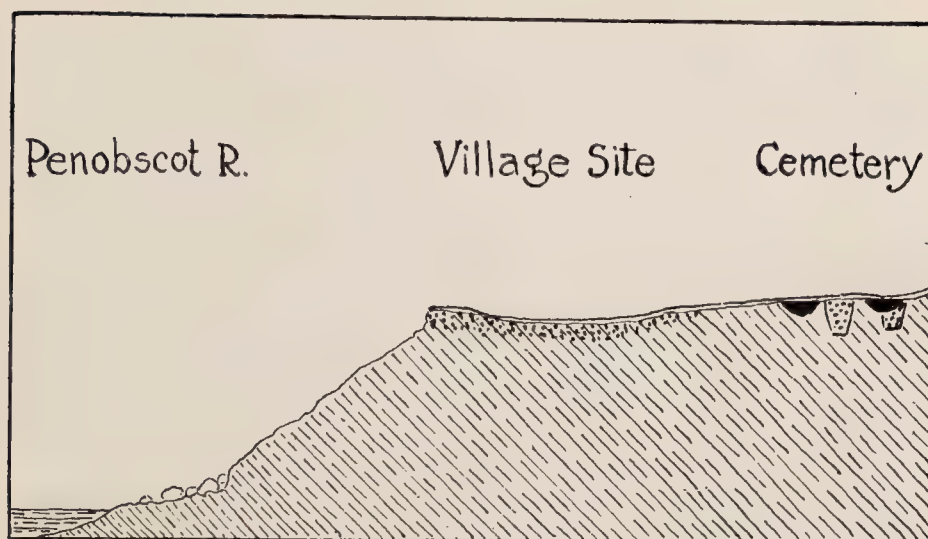


FIG. 46. Cross section of the site of two prehistoric cemeteries and a village near Eddington Bend, Maine.

RED PAINT GRAVES

Before the cremation pits were entirely worked out, Red-Paint graves were discovered at a greater depth, indirectly underlying these pits, but spreading out over a larger area. In all, eighteen graves containing ochre were excavated. The accompanying plan, Figure 47, and the cross-section, Figure 48, show the location of graves and pits and their relation to each other. There are no discernable outlines to these graves, and their original size is judged only by the extent of the ochre deposits and the occasional relics found just outside. The soil is, near the top, a fine loamy sand, with yellowish or grayish sand extending to the depth of the grave. The ochre was as a rule deposited on coarse grayish sand which gave excellent drainage. In some graves boulders were found, and in one case the red ochre had been deposited directly on top of a large boulder. The whole formation is glacial, varying in material in different parts from clay to sand, gravel, and boulders.

The graves were between thirty-two inches and forty-one inches deep, and the ochre deposited at the bottom varied in different graves from about two feet to a little more than four feet in greatest diameter. All but two contained relics.

While all Red-Paint cemeteries are alike in many respects, each has its own local characteristics. In this one no new types of relics were found, and several kinds occurring elsewhere were absent.

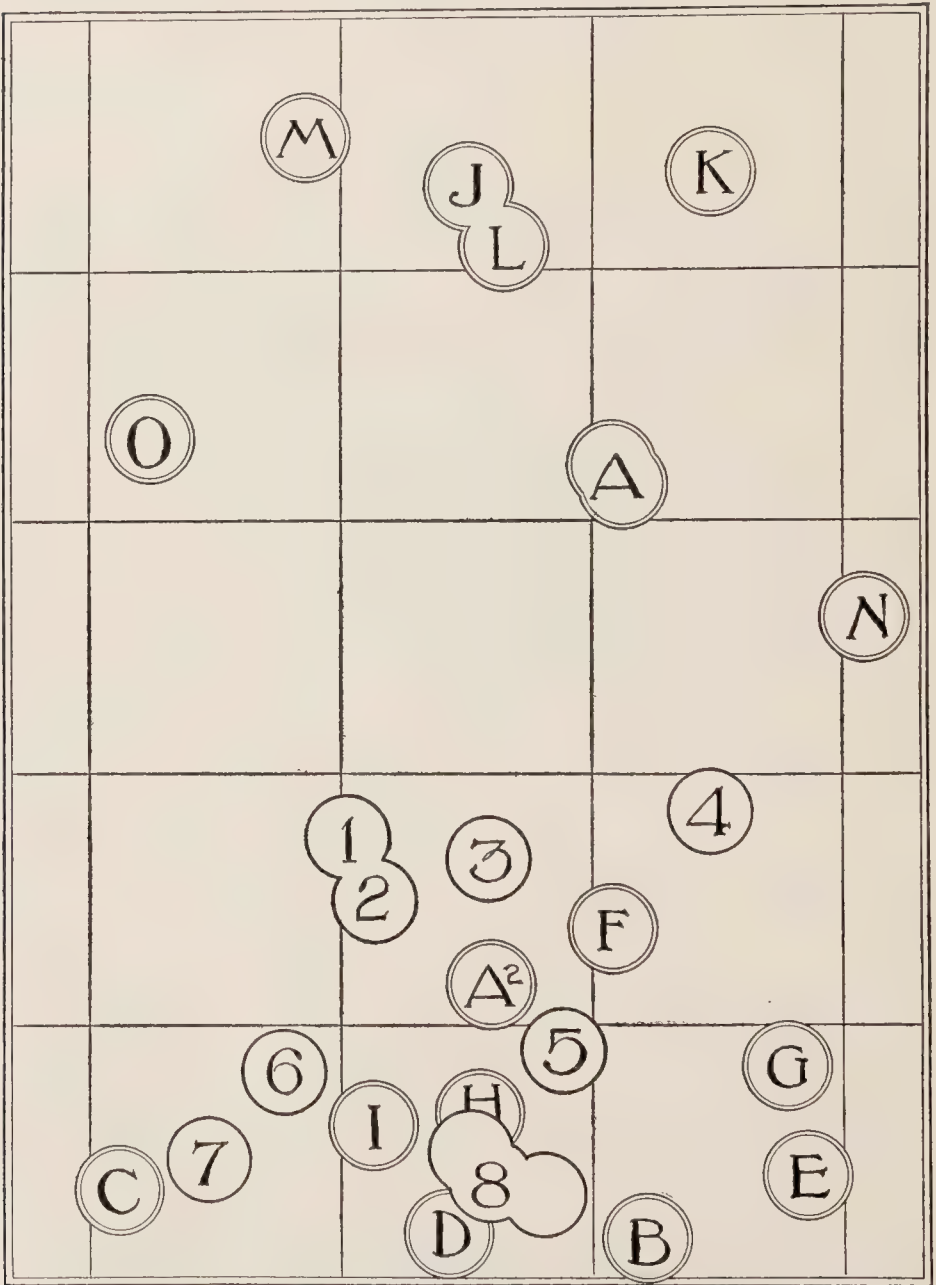


FIG. 47. Plan of prehistoric cemetery near Eddington Bend, Maine, showing graves of the Red-Paint People (lettered) and cremation pits of the Perforator Makers (numbered). Each square is 10 feet across.

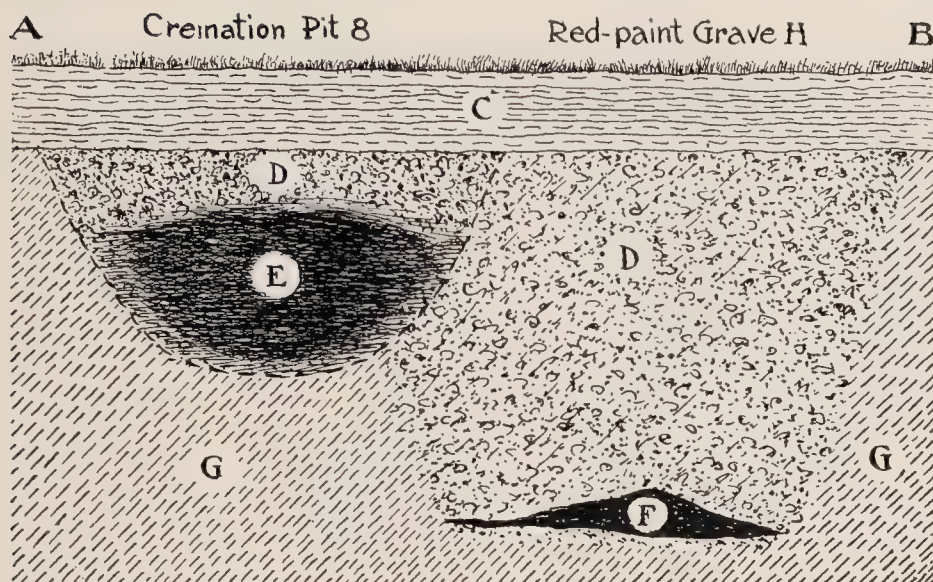


FIG. 48. Vertical cross section A, B, through Cremation Pit 8 and Red-Paint Grave H. C. Cultivated soil. D.D. Disturbed sand. E. Lampblack-like mass with many fire-broken objects and calcined bone-fragments. F. Red ochre with a few relics. G.G. Undisturbed sand.

No definite outlines for any of the Red-Paint burials could be determined, but an occasional flint chip or a bit of charcoal and patches of darker colored sand were sufficient evidence of soil disturbance without the conclusive proof furnished by large quantities of red ochre with stone relics found at the bottoms of the graves. The cremation pits, of a much later time, showed well-defined boundaries and the disturbed soil was somewhat darker colored throughout than that of the Red-Paint graves.

OBJECTS FOUND IN THE RED-PAINT GRAVES

Human Bones

Perhaps the most important discovery made here was the finding of small fragments of bones closely bunched and completely imbedded in a dense mass of red ochre forty-one inches from the surface in Grave H. They were sent to Professor Moorehead, who submitted them to Dr. Hooton for examination. Dr. Hooton secured the opinion of Dr. Glover Allen as a check upon his findings, and reported them to be calcined human bones. Although none of these fragments exceeds an inch in length, Dr. Hooton was able to identify five of the various parts by name. The only stone relics occurring in the ochre with the bones are two chipped blades

made of material closely resembling the Mt. Kineo quartz-porphry. The spearhead, Figure 51a, was one foot from the bones, lying flat and pointing west. The small spearhead or arrowpoint, figure 51b, was about the same distance from the bones in an opposite, easterly, direction. The red ochre had a maximum thickness of seven inches and thinned out in an irregular oblong area of two by three feet. It was unusually firm and probably could have been removed mostly as a solid cake. A small mass of limonite—all that was left of a fire-making set—was found in the ochre near the bones.

The presence of human bones in red ochre—and these are the first found to be positively identified as such—is pretty sure evidence that these places are really graves and not votive offering deposits. It is somewhat surprising to find the bones showing evidences of calcination, as no traces of fire, below the top soil, show in any of these graves. Therefore it seems that the burning must have been done before the burial, unless it be possible that sufficient heat to produce this calcining might have been developed by the decomposition of pyrite fire stones.

Fire Making Outfits

A particularly interesting feature of these deposits was the care with which they had been supplied with the means for producing fire; nearly every grave contained two or three flattened ovate masses of limonite—from two and one-half to four inches across by one to one and one-half inches through—coated with rather loosely adhering iron-stained sand which could be for the most part easily brushed off. The majority of the clam-shaped objects are hollow or contained yellow ocre and a greenish colored powder. The sides of some are thin, smooth, and usually somewhat broken. The sides of one had almost completely disappeared, leaving only a doughnut-shaped ring of rough limonite. These thin sides either show an impression of birch bark or are fossilized birch bark—limonite pseudomorphs. An attempt has been made to show some of these in Figure 49. The original substance of the limonite and yellow ochre may have been pyrite, but in this cemetery its decomposition product resembles that of those hard, impure nodules of pyrrhotite from Katahdin Iron Works. In one instance a small hammerstone of quartz-porphry was found

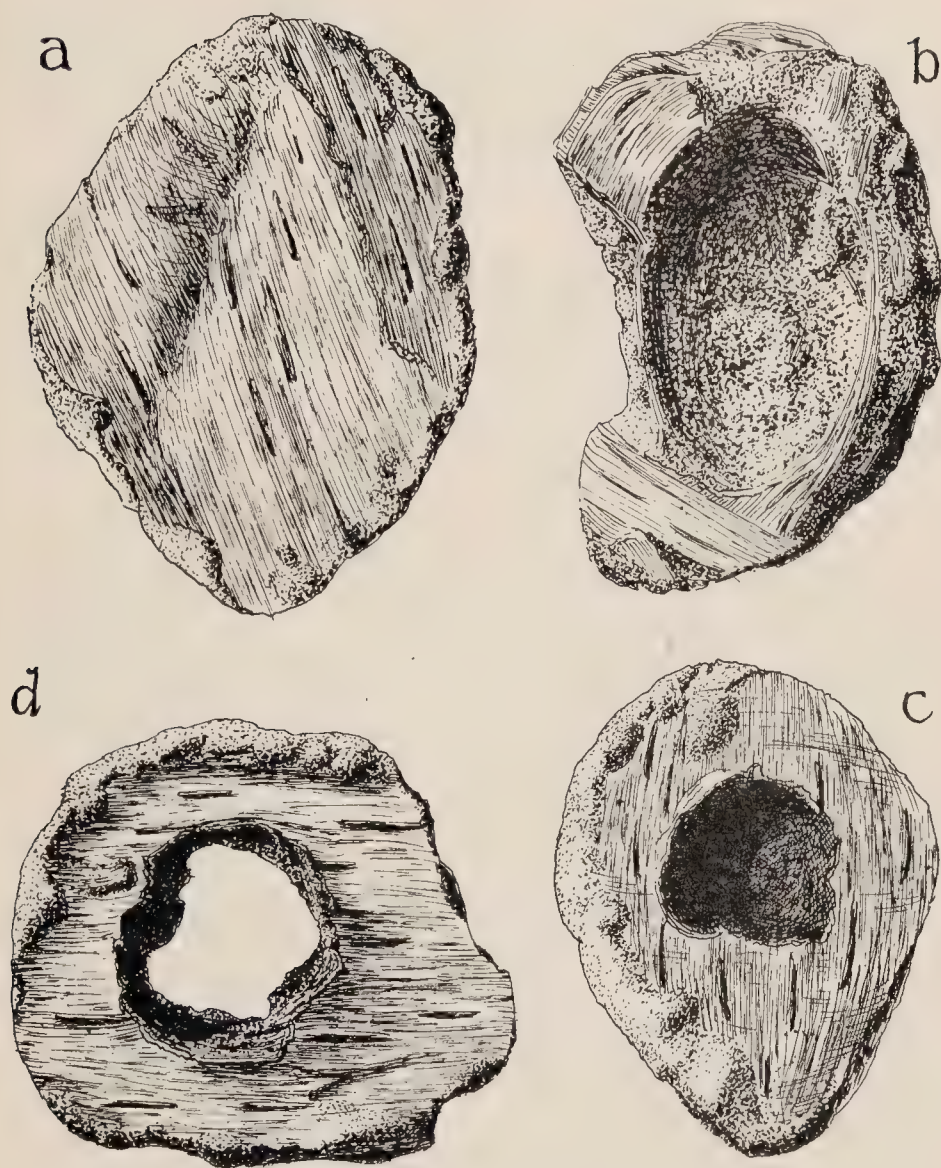


FIG. 49. Parts of "Red-Paint" fire-making outfits. Once nodules of pyrite, now limonite pseudomorphs, with fossilized birch bark covering.

firmly attached by iron rust to a small mass of limonite. It is evident that two pieces of pyrite—or other hard ore—or one of pyrite and one of a flint-like stone were carefully wrapped in birch bark and placed in the grave, that material for kindling a fire might be at hand when needed—clear proof of the Red-Paint People's method of making fire, also of their belief in a future existence.

The birch bark may have been intended for kindling or used only to protect the objects which it enclosed. The shape of some of these limonite masses suggests that the fire-making outfits may have been enclosed in large clam or scallop shells.

Stone Tools and Weapons

These will be but briefly noted, as all are of types common to other Red-Paint burial places and have been fully described elsewhere. The most numerous found here may be classified as *celts*.

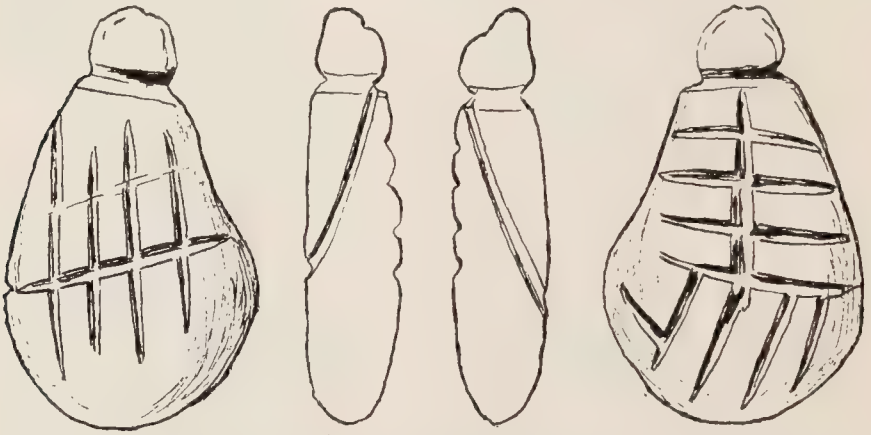


FIG. 50. A "Red-Paint" plummet with puzzling inscription. Full size.

Of these seven are *adz-celts*, four are *hatchet celts* and three are *thin chisels*. There are three gouges, all shaped like the *adz-celts* but with pronounced hollows. No deep-grooved gouges were found. *Pear-shaped plummets* are characteristic of all cemeteries of this kind. Five only were found here. Four are of the ordinary kind. One, however, though small, flattened and rather poorly made, is of particular interest on account of the unknown story told by the deeply incised lines which it contains. Figure 50 shows sides and edges. Four of the seven spearheads found are sketched in Figure 51. Attention has already been called to two of them. Figure 51c is unusual, as it shows a polished specimen subsequently chipped. The material is white in color, hard and dense—probably a variety of quartz. Figure 51d shows one made of flint. Perhaps the smaller specimens should be called arrow-points. The comparative scarcity of small chipped blades in Red-

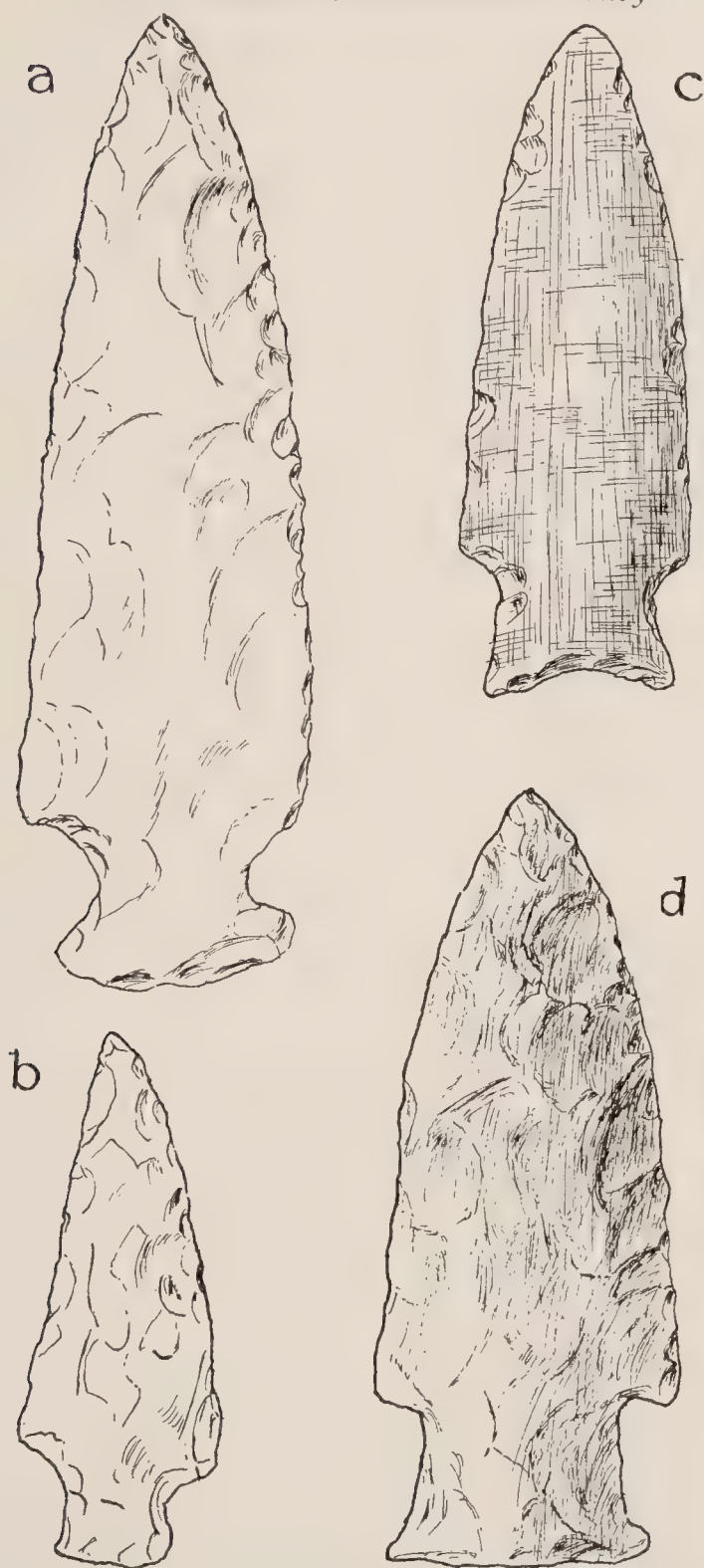


FIG. 51. Spearheads of the Red-Paint People.
Compare with blades of the Perforator Makers
(Fig. 41). Size, about 3-4.

Paint cemeteries, however, causes some doubt about these people's knowing the use of the bow and arrow. Certainly these little blades could have been used as small spears, darts or knives.

Slate lanceheads are peculiar to the Red-Paint horizon, but are not present in all Red-Paint cemeteries. In this one only a single piece was found, a typical section of those long, slim, hexagonal artifacts which have caused considerable speculation as to whether they were used for ceremonial purposes or as weapons. This piece is only three inches long and lacks both point and base, yet was deposited in that condition on top of the ochre in the grave. But probably no special significance should be attributed to this fact, as parts of things, though rather rare, have been found in other cemeteries of this type as well as here. Thus grave C contained a corner of a light-green, nicely smoothed slate tablet, and a half only of a thin chisel was found in another grave.

All other worked stone objects were entire except that a few had begun to disintegrate.

A "book" of mica was imbedded in the pigment deposit of grave I. Single "lucky stones" were found in several graves, and three in grave N. These are small polished pebbles of various kinds of hard rocks of unknown use or meaning.

It seems certain that articles other than stone were at least in some cases placed in this red paint—perishable things that show now as rounded sections and long streaks without sharp boundaries or definite shapes and observable only by the color contrast of their ashes with that of the red ochre. A microscopical examination of this gray dust revealed in several instances a few minute scales of charcoal. This indicates that fire-smoothed shapes of wood may have been the substances buried and their rod-like shapes and half-round section suggest bows, arrowshafts and spearhandles. But these dust forms are but gray ghosts of the original objects and are far too intangible for identification.

DIFFERENT CULTURE OF ANCIENT INHABITANTS OF THE VILLAGE SITE DIFFERENTIATED BY SURFACE RELICS

Surface Relics of the Red-Paint People

This village site along the bluff has undoubtedly been inhabited at different times by various tribes antedating the white

man. Types of relics common to all village sites on the Penobscot have been found here; also in addition to these are many types or variations of forms rarely or never found at the other sites known to the writer. The term "surface relics" is intended to include all those things that obviously have not been purposely buried.

A century or more of cultivation has mixed things up so much near the surface that any superficial stratification of soil is destroyed. Yet a study of these relics and a comparison of them with the things found in the nearby graves and pits enables us to identify positively many surface objects as peculiar to the Red-Paint culture. Some are broken, some are unfinished, some are recognized only by material, but they are plentiful enough to satisfactorily prove that the Red-Paint People had a village here in some long ago time.

Surface Relics of the Perforator Makers

In like manner objects unlike those of the Red-Paint culture are seen to be practically identical with relics found in the cremation pits. Thus we have rather clear proof of occupancy of the same site by people who used different materials (in part) from the Red-Paint People, who made different shapes and types of artifacts and who had far different burial methods. It is apparent, too, from the burials that a long period separated the Red-Paint People from the diggers of the cremation pits whom we will call here for convenience of designation "The Perforator Makers."

It is a significant fact that while some gouges and certain celts of the Red-Paint People are much like those of the Perforator Makers in shape, in no case did these two cultures use the same kinds of stone for these implements. Indeed, the only type of rock common to both seems to be the Mt. Kineo quartz-porphry which was employed for chipped implements only.

Surface Relics of Other Tribes

After the types of relics peculiar to the above cultures are culled out, many surface relics remain. Among these are pottery fragments, grooved axes, an occasional club head, the ordinary notched arrowpoint, triangular warpoints, net-weights, etc., which have not been found in either type of burials described but which

are more or less prevalent at other village sites along the river. Most of these, as well as the majority of the very plentiful scrapers, hammerstones, and refuse are undoubtedly much later than Red-Paint relics and probably more recent than those of the Perforator Makers, but whether they represent one tribe or more is uncertain.

WHO WERE OUR ANCIENT PREDECESSORS ON THE PENOBSCOT?

The cultivated area of this village site contains, too, occasional objects of European make and reminders of our own Colonial times. A few oxidized bullets, a gun flint, several brass buttons, one of lead and one of copper, a glass bead and small bits of iron, lead, copper, and glass represent the White Man's handiwork. Of course these may have been lost or discarded by early adventurers or settlers, but a few show saw-tooth Indian-style notchings, and the majority were probably among the first metal possessions of the Red Man in this locality.

These things are noted here as an indication that this village site was not totally abandoned till after it was possible to obtain articles of European make.

It seems strange that in this climate most modern objects withstand the ravages of time such a relatively short period compared with the enduring stone artifacts left by the Indians. For instance, a flintlock gun would probably completely disappear—"lock, stock and barrel"—before the gun-flint would show an appreciable patina of age, and a gun-flint is not more enduring than a flint arrowpoint.

Abenakis and Contemporary Tribes

It is thought that trade goods may have been obtained from white adventurers who are supposed to have been here prior to 1604, the beginning of the river's official history, but of this we have no definite knowledge.

The Indians found living here then, the Abenakis, though not always described by the same name, were undoubtedly the ancestors of our present Penobscot tribe and are included in the great Algonquian stock.

Several of their abandoned village sites are known, and we have some knowledge of their ancient stone weapons and tools, of their pottery and pipes, of their customs and beliefs, and of their burial methods.

But the Penobscots evidently did not have sole possession of the river, at least during parts of the sixteenth and seventeenth centuries, as some of these village sites contain relics of other tribes. For instance, many of the stone pipes found on the river are of the well known Micmac type, and certain arrowpoints and spearheads of the old Mohawk enemies are believed to be recognizable on account of craftsmanship and the kind of stone used.

But the Penobscot has been an important old-time highway, and the relics of many tribes are mingled thereon—the comparatively recent ones contemporary or nearly so with the Algonquian. Not much headway can be made, however, in positive identifications of such people, from the relics found, without a knowledge of favorite materials and tribal specializations, and this knowledge is best obtained from a careful study of their burial places and the relics found therein.

It may be mentioned here that at the arrival of Europeans the Indians of the Penobscot buried their chiefs in a standing position (enemy chiefs head down); certain warriors were buried in a sitting position, and other persons were buried extended at full length. Graves of each type have been accidentally discovered here and there. Some of these contained stone implements and wampum, but with one or two exceptions the others had metal objects also—iron axes and brass kettles particularly.

Several small cemeteries containing stone relics have been found in this region in gravel banks opened for obtaining railroad ballast and road material. In no instance were careful observations made, although a few relics were saved as curios. These are apparently Algonquian. Single Algonquian burials are not very rare, but no large cemeteries antedating the arrival of Europeans have been found on the Penobscot. Indeed, fewer graves of the Algonquian have been found than of the Red-Paint People.

The Perforator Makers

This term is used tentatively, as the only knowledge the writer has of these people is that derived from the cremation pits hereto-

fore described and from the corresponding relics of the village site. Their burial methods and their implements (in part) were unlike those of Algonquian tribes hereabouts. They are also strikingly different from those of the Red-Paint culture.

Although some memorial significance is suggested in finding cremation pits of the Perforator Makers located over Red-Paint graves, yet the difference in relics and the obviously great difference in age would imply that such location is merely coincidental. In no case was a pit of the Perforator Makers dug deep enough to reveal the red ochre.

In this connection it may be noted that most modern cemeteries along the river are located on glacial kames, ridges, or slopes and largely in sandy soil. In one of these modern burial places scarcely a grave was dug for years without stone relics being found. Some of these have been preserved, and we now readily recognize them as typical of the Red-Paint horizon. White settlers had here apparently inadvertently selected as a cemetery site the same spot that the Red-Paint People had used for a like purpose centuries before—a case parallel to the ones here considered.

The Red-Paint People

It seems safe to say that the Red-Paint graves were dug by the so-called Red-Paint People. Who they were, when they lived here, where they came from, where they went, if they are extinct, or whether their modernized descendants still exist, are questions hardly possible of local solution as they are partly involved in the greater problems which concern the entire Indian race.

Yet careful study of each cemetery and village site discovered adds a little to our knowledge of the extent of the territory they occupied; of their burial methods; of the materials, types, and workmanship exhibited by the enduring stone relics which we find: and these give us some ideas of their habits, customs, and stage of civilization. When the sources of certain materials used by them have been found (as they no doubt will be), we shall have a clue at least to some of their wanderings.

While it is evident that Red-Paint relics represent an ancient culture, yet their makers were by no means primitive, from a stone-age viewpoint. Their tools and weapons indicate by selection of materials, high specialization of forms and expert work-

manship, the culmination of a period far removed from the primitive stages of stone-tool making.

The Esker Man (?)

Once in a while there is found in the glacial gravels a relic which seems to be far older than those of the Red-Paint culture. These are mainly roughly chipped knife-like blades similar to many "rejects" of ordinary camp sites. The reasons for considering them to be extremely old are, first, their weathered or worn appearance, or both; and second, the depth at which they were found.

Two examples which seem to belong to this class were found by the writer in the neighborhood of the village site described in these notes. One is a rough knife of Kineo quartz-porphry weathered as much as any unwrought piece of the same kind of rock found in the same gravel (Figure 52a). It was dug from the face of a gravel and clay bluff seven feet from the surface and at least fifty feet above the river. The formation was noticeably stratified, and no evidence of a slipping could be detected.

The other example, Figure 52b, would ordinarily be called an arrow-point. It is made of a grayish, fine-grained variety of quartz and was plainly chipped into shape, although the entire surface is worn smooth. It was found about one eighth of a mile from the first specimen, four feet from the surface, in gravel. No other relics were found near it although a considerable area was dug over. No evidences of its burial could be discovered.

Several other worn and weathered specimens, Figure 52, c and d, have been found here and there within a few miles of this place by workmen, accidentally, in excavating for gravel. All are said to have been found at considerable depth, but the data are not very reliable. Figure 52c shows another example of this class from the Fort Hill gravel pit in Veazie.

Several years ago, in a paper presented at a meeting of the Bangor Historical Society, the writer referred these strikingly worn and sometimes deeply buried artifacts provisionally to a pre-esker horizon, attributing their rounded and worn appearance to the abrasive action of the long ago water moved gravel with which they are associated. This does not mean pre-glacial, as explained, but is intended to signify that, in the writer's opinion, human be-

ings were here before the high gravels of the Penobscot ceased to be disturbed by torrential waters.

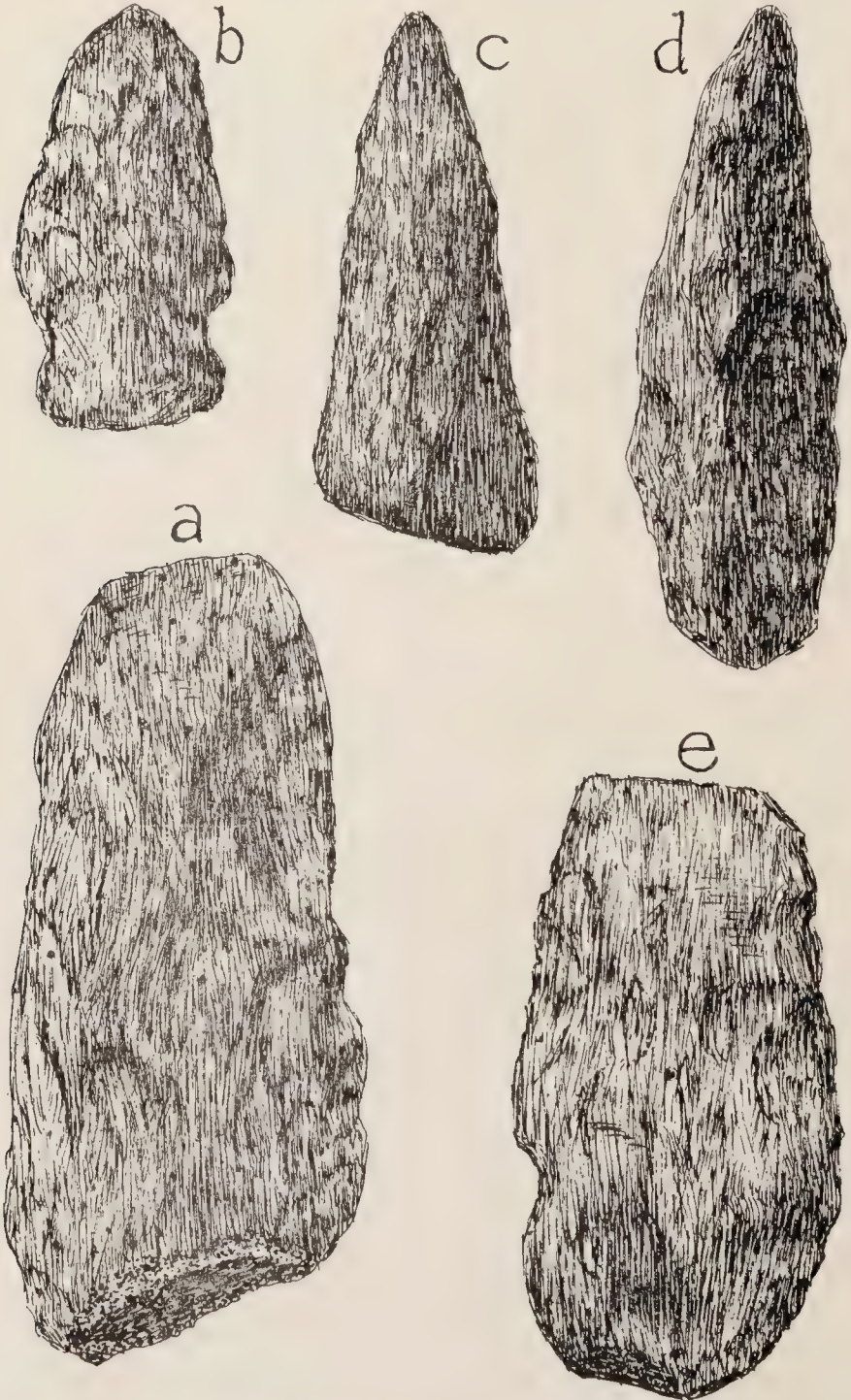


FIG. 52. These rough blades found at considerable depths in the glacial gravels of high kames and eskers indicate that man was here early. Full size.

IF NORSEMEN LANDED ON THE COAST OF MAINE NINE CENTURIES AGO COULD TANGIBLE EVIDENCES OF THEIR VISITS STILL EXIST?*

During the latter part of August and the first part of September of the present year (1923) the writer had the pleasure of working with Professor Warren K. Moorehead at and about the site of the old forts at ancient Pemaquid. The locality is well known on account of its attractions as a summer resort and for the baffling features of its early history, or rather for lack of history concerning its first occupancy by white people. Interest in the place seems to have been aroused anew this season, perhaps by a report that two bronze spearheads of Norse type had been found in the Pemaquid region. These, I take it (I have seen only a bare newspaper mention), were not found recently, and "Pemaquid region" is far from definite as a close location. Anyhow, one feature of our work consisted of keeping a careful watch for evidences which could suggest a landing here of Norsemen nine hundred or more years ago.

This is not a full account of work at Pemaquid but merely some notes which somewhat incidentally touch its Norse phase only. The report will be ably presented by Professor Moorehead, who had charge of the investigations.

POSSIBLE LANDINGS OF NORSEMEN

It is generally thought by those persons most competent to judge, that Norsemen *did* discover the eastern coast of North America; that the sagas describing Leif Ericson's voyage in the year 1000 as far southwest as the place he named Vinland, the voyages of Thorwald in 1002 and 1004 and that of Thorfinn Karlsefne with his wife, Gudrida, in 1008—all from Greenland to Vinland—are chronicles of actual geographic discoveries told in the manner of those times.

But Vinland has never been satisfactorily placed, although long supposed to be in the southern part of New England. It might have been somewhere on the Maine coast, or it may even have been somewhat farther north. Descriptions in the sagas concerning it apply only in part to any of these places and need the

*Read at a meeting of the Bangor Historical Society, October 31, 1923.

addition of tangible confirmatory evidences to make its location certain.

Some of these adventurers stayed at Vinland, or Vinland the Good, as it came to be called, for several years. Thorfinn's fleet, we are told, consisted of three vessels and a total crew of 160 men. They built houses, they traded with the natives, they explored to some extent the country roundabout, they cut cargoes of choice wood. These things are stated in the sagas in a matter-of-fact way and with considerable detail.

If the sagas are true, it seems improbable that some of the numerous bays of the extensive coast of Maine could have remained unknown to these hardy voyagers. They would have been lured here by the spirit of adventure or the hope of gain, or driven hither by storms.

WHAT RELICS COULD SURVIVE "THE GNAWING TOOTH OF TIME?"

The crosses placed over the grave of Thorwald at Krossanaes, wherever that may have been, and unsuccessfully sought for by his brother, Thorstein, would have completely disappeared, as well as all other articles of wood made at that early date. So, too, in all probability, would the bones of Thorwald, unless greater care was taken in his burial than is likely.

Norsemen of this period had weapons and tools of iron and steel. These in most cases would now be represented by small masses of iron oxide—plain rust; or if any parts of the originals remain, they would be difficult to distinguish from those of a much later date. Yet, I have heard of pieces of very ancient iron covered with a thin patina which has preserved them from further oxidation.

While iron very likely had long replaced most tools of bronze, the latter substance was undoubtedly used to a considerable extent for parts of armor and shields, for sword-hilts, knife-guards and ornaments, as well as for certain ship hardware, and maybe, culinary utensils. Perhaps, too, some bronze spearheads and battle-axes were still in use. Most objects of copper, or its alloys like bronze and brass, would yet be recognizable even after this long period. So, also, would lead and silver.

Wherever man has had camp-fires, charcoal is usually left. This is one of the most unchanging of substances. Yet charcoal alone, even if obviously that of an ancient camp-fire, would not indicate what manner of man built it. Old Indian fire-sites often show fragments of pottery. Possibly shards of Norse pottery might be found in like manner. Glass, particularly beads, is also among the possibilities.

As to inscribed rocks, Indian inscriptions on rocks and ledges are known to occur in Maine. Once in a while, too, other mysterious markings popularly supposed to resemble runic characters are reported. The few examples I have examined are plainly not such but are attributable to natural causes. One supposed inscription, while very unusual, is glacial scoring; another is a peculiar series of veining in a rock of which the ground-mass is harder than the vein material, thus causing the meaningless "characters" to appear incised. Both of these examples were found on Penobscot waters.

So-called inscriptions at Monhegan and Manana Islands I have not seen, but a fisherman told me that similar curious markings may be found at Pemaquid. Here the old schists and gneisses, with their irregular enclosures of masses and veins of pegmatite present rough and unattractive surfaces for inscribing, but this formation is penetrated here and there by broad dykes of an eruptive rock with smooth sea-worn faces. On some of these were found the "curious markings." These supposed marks are of neither Indian nor Scandanavian make, but are natural crevices. They show where the rock is broken at right angles to its jointing planes and these joints intersecting at various angles on becoming sufficiently weathered, in some cases resemble incised chiseling of purposeful design. A fragment which I found on the beach shows these alleged marks fairly well.

If Indians acquired enduring trinkets of the Scandinavians, through trade or otherwise, such objects would have been treasured by them and no doubt buried in the graves of their last possessors. So I have thought that old Indian cemeteries of the coast region would offer favorable places for the discovery of Norse relics if they were ever here.

We could locate neither Indian village sites nor burial places around Pemaquid, although a number of shell heaps in the region

attested abundantly to ancient Indian occupancy. No trace of European work was found in any of these, nor were they rich in relics of any kind. The objects found were of the usual types: bone awls and harpoons, stone arrowpoints and scrapers, and potsherds. Quite a number of long bones broken and split lengthwise were found. Deer teeth were rather numerous, those of the bear and beaver less abundant. Most bones were in a good state of preservation. Mention is made of this fact because bones seem to decay very slowly in some shell heaps, perhaps on account of protection afforded by the shells and excellent drainage.

MORE KNOWLEDGE NEEDED

Capt. A. W. McFarland, who lives at McFarling Cove, told us that when he was a young boy—something like 70 years ago—the skeleton of a man was dug from a shell heap at Robinson Cove (about two miles from Pemaquid Beach). With these bones were many pieces of metal which were supposed at that time to have formed some sort of armor, or breast plate. We did not learn what became of this find.

Indian skeletons have been found elsewhere with plates of native copper, and sometimes pieces of brass kettles accompanying the bones. It would be interesting to know positively if this is a similar case.

There is a beautiful beach of white sand at Pemaquid. It is a half mile or more long and curves around to Fish Point, where the ledges begin again. After a big storm a few years ago, Mr. Frank McLain found a large "flint" spearhead on the beach near this point. It was close to the bank and he thinks it had been washed therefrom. It is eleven and a quarter inches long, two inches wide and nowhere more than one-fourth of an inch thick. It is symmetrical and boldly chipped, although its edges look somewhat battered. In color it is a dark olive-green.

No doubt of its being an Indian relic would have been raised but for our eagerness to find something Norse. So this spearhead, as well as certain other objects, came in for particular scrutiny. It was noted that it was rather smooth from wear; that it showed a faint longitudinal banding with slight striae of weathering; that the material of which it is made is different from that of familiar relics of this State; that it is not real flint but seems to be identical

with certain varieties of the mineral, or rock called *hällflinta* in Scandinavian countries, where such material is not rare. These features do not prove, of course, that it was not made by Indians and of American material, but if it is found by comparison to be really identical in material and workmanship with known Scandinavian relics, then there will be excuse for the following premature surmises as to how it got here :

- a. That it was brought here by Scandinavians while they were still living in the Stone Age.
- b. That it may have survived as an amulet or fetish even till the time of Leif Ericson's voyage.
- c. That it drifted here in a boat, the occupants of which perhaps perished en route.
- d. That firmly attached to a wood shaft—say of spruce—it was possible for it to have floated to our shores alone.

These guesses are mentioned to show how far speculation may be easily carried—with or without reason.

This spearhead is at present in my possession. It is probably of Indian make, but should it prove to be otherwise, then it ought to be owned and cared for by the State.

PUZZLING OBJECTS SHOULD BE IDENTIFIED

If that proverbial needle was really lost in a haystack, there is a chance for its finding; but a search for it would be far simpler if one knew the precise haystack that contains it. If Norsemen actually discovered North America at that early date, I believe there is still a possibility of finding proof of it, unless such proof is already destroyed.

With this possibility in mind it is fitting that collectors of Indian relics, all those who dig in shell heaps, the discoverers of unknown inscriptions on rocks, and anyone who finds puzzling objects of metal, pottery or stone, which are occasionally uncovered from their burial places along our coast, should save them for identification. The majority of such "finds" will of course prove to be of easy interpretation and of little consequence, but there is a possibility—always a possibility—that something may be found of far greater significance.

These notes prove nothing. Their main object is a plea for closer observation; an urge for greater care that tangible objects of a possible Norse origin, perhaps at our very doors, be not carried away unrecognized to the junk man.

UNIVERSITY OF MAINE STUDIES

(SECOND SERIES)

- No. 1. The Life and Work of John Davis,
1774-1853, Thelma Louise Kellogg
- No. 2. Economic Feminism in American Literature
prior to 1848 A. Genevieve Violette
- No. 3. Roumanian Folk Tales, Retold from
the Original Jacob Bernard Segall
- No. 4. Thomas Green Fessenden Porter Gale Perrin
- No. 5. Mental Attainment of College Students in
Relation to Previous Training, Environment,
and Heredity J. W. Gowen and
Marjorie Eunice Gooch
- No. 6. The Formal Eclogue in Eighteenth-
Century England Marion Kathryn Bragg
- No. 7. Indian Remains of the Penobscot Valley
and Their Significance Walter B. Smith

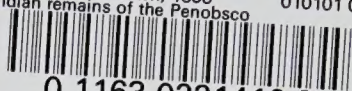
UNIVERSITY OF MAINE STUDIES

(OLD SERIES)

- No. 1. The Effect of Magnetization upon the Elasticity of Rods, by James Stacy Stevens. 1900.
- No. 2. The Life-History of *Nucula Delphinodonta* (Mighels), by Gilman Arthur Drew. 1901.
- No. 3. A Preliminary List of Maine Fungi, by Percy LeRoy Ricker. 1902.
- *No. 4. A Catalogue and Bibliography of the Odonata (Dragon-Flies) of Maine, by Francis LeRoy Harvey. 1902.
- *No. 5. A Study of the Physiographic Ecology of Mount Ktaadn, Maine, by LeRoy Harris Harvey. 1903.
- No. 6. The Habits, Anatomy, and Embryology of the Giant Scallop, (*Pecten Tenuicostatus*, Mighels), by Gilman Arthur Drew. 1906.
- No. 7. Meteorological Conditions at Orono, Maine, by James Stacy Stevens. 1907.
- *No longer available for distribution.

F 21 .S65
Smith, Walter Brown, 1858
Indian remains of the Penobscot

010101 000



0 1163 0221416 2
TRENT UNIVERSITY

F21 .S65

Smith, Walter Brown

... Indian remains of the
Penobscot valley and their
significance.

DATE

ISSUED TO

28677

Date Due

T. J. BATA

MAR 2 1971

~~LIBRARY~~

JUL 23 1971

APR 2 1979
APR 19 1979

PRINTED IN U. S. A.



CAT. NO. 23233

